Microsoft Power Platform Microsoft Teams

Building solutions with Dataverse for Teams

Lab 5 – Analytics with Power BI

Workshop Version: 1.3, Published: 08-2022

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Exercise 1:
Connect and prepare the data

Important – Working with lab tenant

- All the labs in this course require you to use the latest version of Edge or Chrome in Incognito/InPrivate mode.
- Use Office 365 credentials retrieved from Labs on Demand (Skillable) in Lab 0.
- Always remember to replace M365xXXXXXX with your lab tenant prefix.
- If you are experiencing any problems with working in your lab tenant – please, notify your instructor as soon as possible.

Objectives:

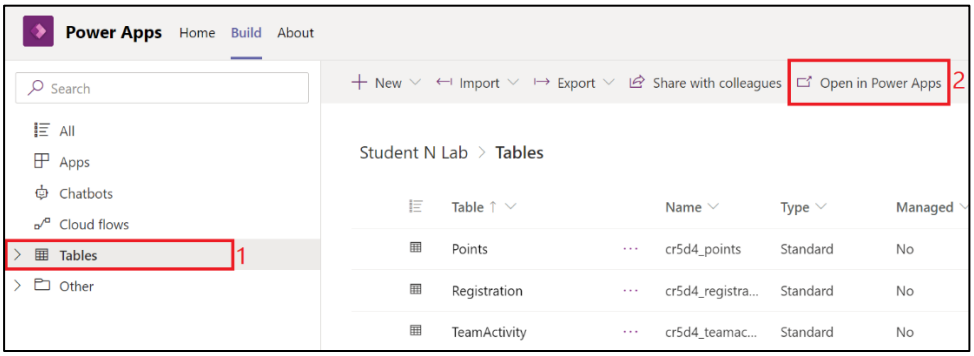
- Get data from Dataverse for Teams
- Apply data transformations and enhance the model

Estimated time:

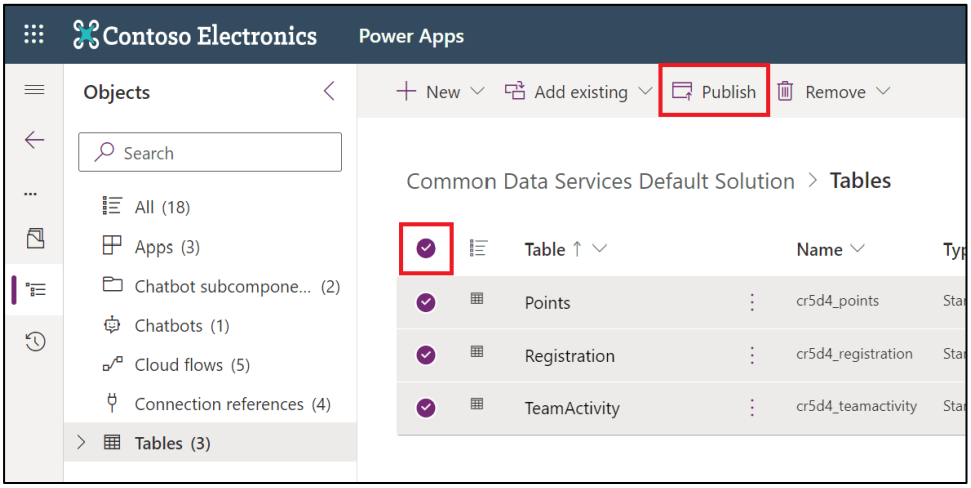
30 minutes

Task 1: Publish Dataverse for Teams tables

1. Navigate to **Dataverse for Teams content of your Team**
2. Select **Tables** in the left menu and then **Open in Power Apps** button in the toolbar



3. Select all the Tables and click **Publish** button

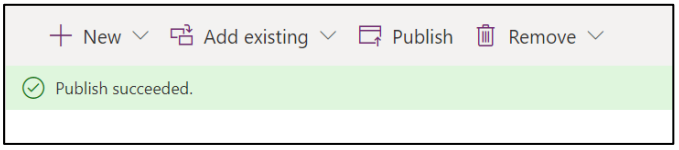


This action is needed to populate string values of Choices fields and lookups for reporting purposes.

For example:
crXXX_approvalstatus = 0 -> crXXX_approvalstatusname = 'In waitlist'

***Note**: If you did optional tasks, please, do the same for **Points** table*

4. Give it a moment, you should see a notification, that "Publish succeeded".

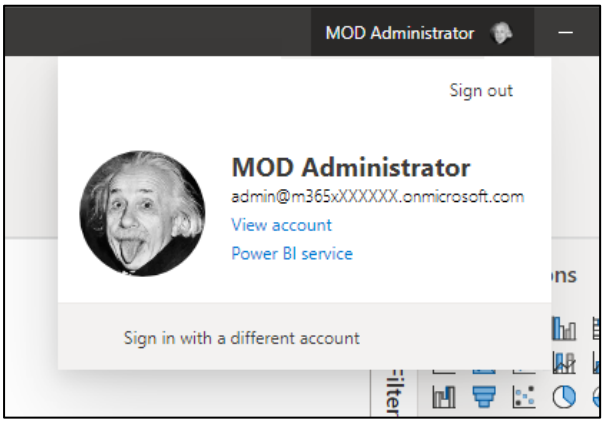


Task is completed.

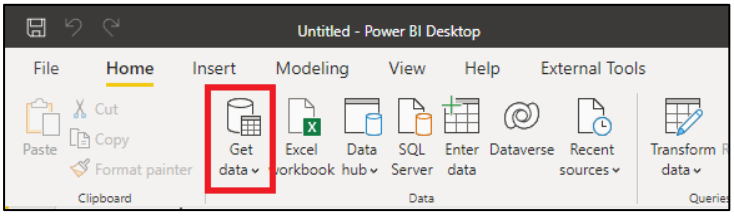
Task 2: Get data from Dataverse for Teams tables

1. Start **Power BI Desktop** client

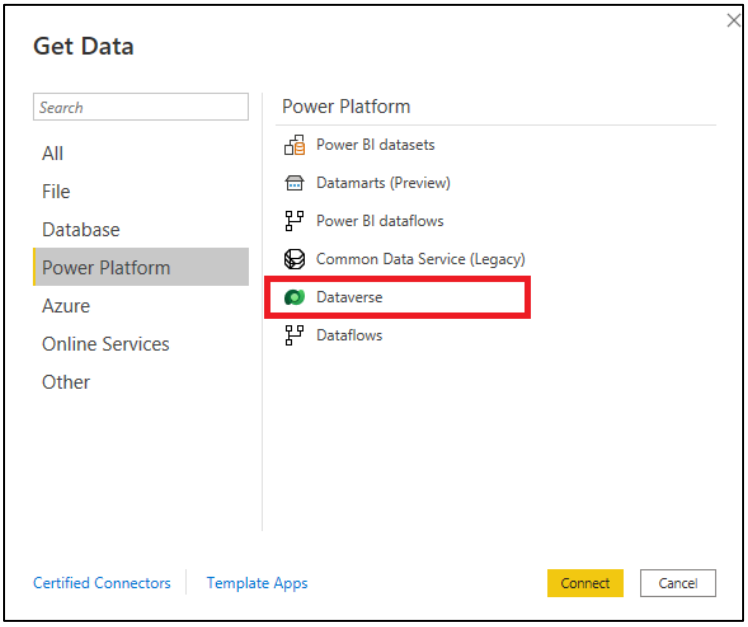
   Make sure you're logged in as *admin@m365xXXXXXX.onmicrosoft.com*



2. First, we need to **Get Data** for analytics from **Dataverse for Teams** tables, that were created before
   Click **Get Data** to start



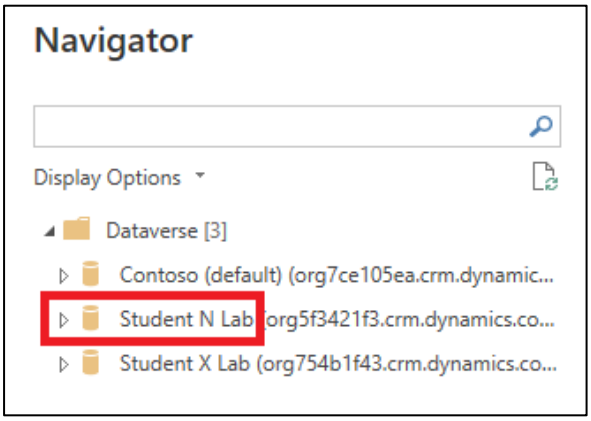
3. In **Get data** dialog, go to **Power Platform** category and select **Dataverse**, click **Connect** button



4. Click **Sign In** button and provide your **Administrator** user credentials to get access to your tables data from Power BI Desktop

After you signed in, click **Connect** button

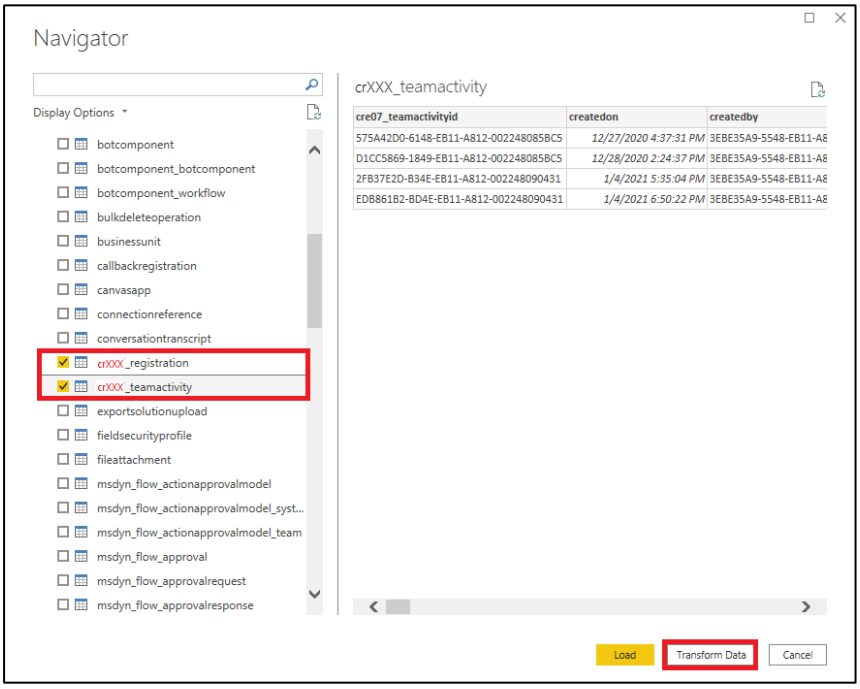
5. Wait for **Navigator** to load all the available environments and expand your Dataverse for Teams (e.g., Student N Lab)



6. In **Navigator** dialog, select **2 tables** that we've created before:
    a. crXXX_registration
    b. crXXX_teamactivity

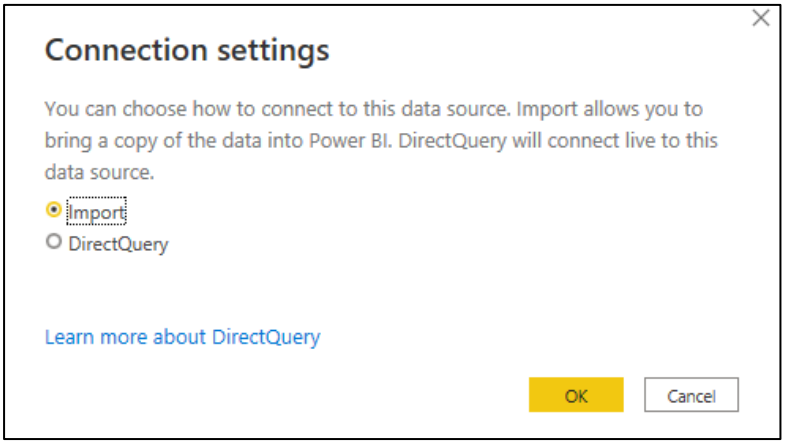
Please, remember, that the custom table names start with crXXX prefix unique for your environment.

Click **Transform Data** button



7. Let's use **Import** data connectivity mode as it provides the best performance and flexibility in terms of data transformations, data mashup and modelling.

   Click **OK** button

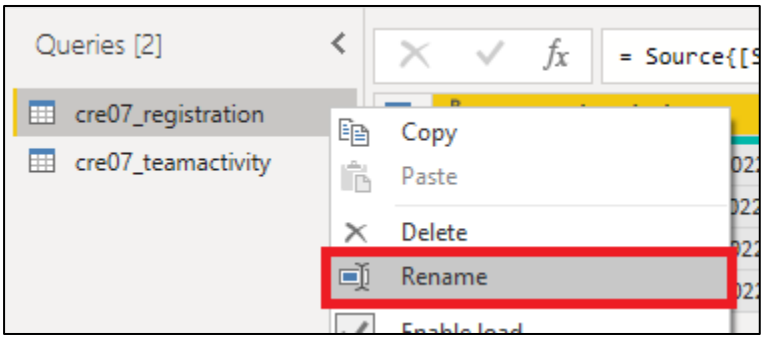


   *Use **DirectQuery** when you work with very big datasets or 'near real-time' reporting is the business requirement*

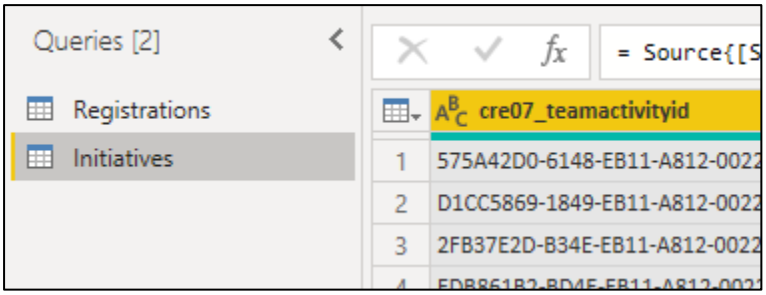
8. You should see Power Query Editor window opened – we're ready for the next task.
   Task is completed.

Task 3: Transform data from Dataverse for Teams tables

1. In **Power Query Editor** left **Queries** panel, right-click on the query and select **Rename option**. Rename both queries:
    a. crXXX_registration -> Registrations
    b. crXXX_teamactivities -> Initiatives



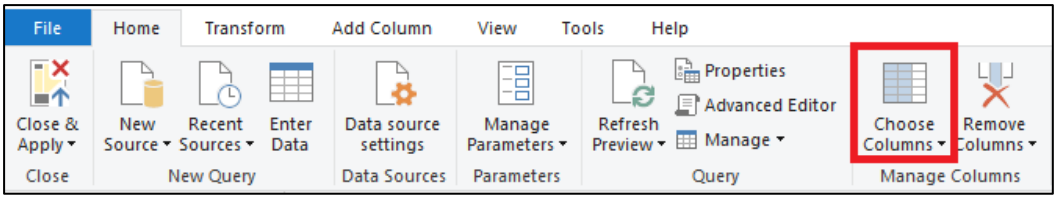
Result should look like this:



We can switch between queries by clicking on them in **Queries** panel

2. In **Query** panel, select **Registrations**
3. First, we can get rid of the data columns, that we won't need.

    Click **Choose columns** button in the ribbon (Home tab)

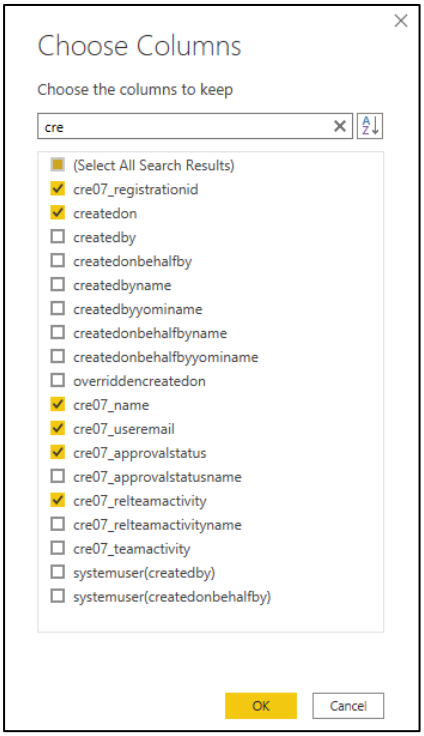


4. In **Choose columns** dialog select the following columns and click **OK**:
    a. createdon
    b. crXXX_name
    c. crXXX_useremail

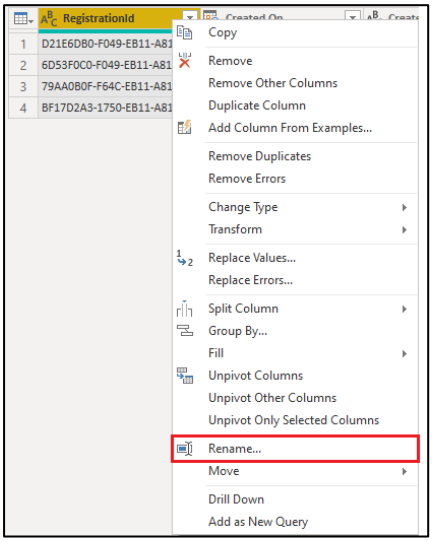
d. crXXX_approvalstatusname

e. crXXX_relteamactivity

f. crXXX_registrationid



5. Right-click on a column header and select **Rename** option to rename it (alternatively, double left-click a column header OR use F2 button)



Rename columns accordingly:

a. createdon -> Created On

b. crXXX_name -> Display Name

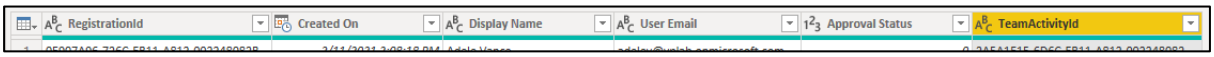
c. crXXX_useremail -> User Email

d. crXXX_approvalstatusname -> Approval Status

e. crXXX_relteamactivity -> TeamActivityId

f. crXXX_registrationid -> RegistrationId

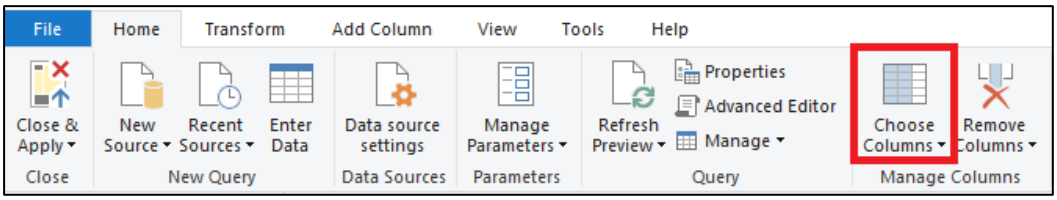
Result should look like this:



6. In **Query** panel, select **Initiatives**

7. First, we can get rid of the data columns, that we won't need.

   Click **Choose columns** button in the ribbon (Home tab)



8. In **Choose column** select the following columns and click **OK**:

   a. crXXX_name

   b. crXXX_description

   c. crXXX_startdate

   d. crXXX_enddate

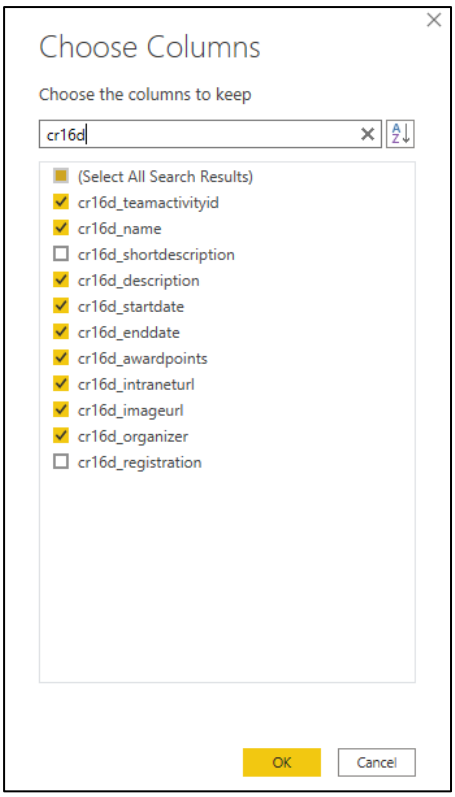
   e. crXXX_awardpoints

   f. crXXX_imageurl

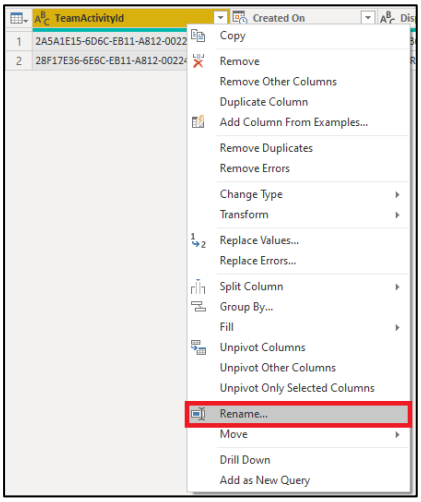
   g. crXXX_intraneturl

   h. crXXX_teamactivityid

   i. crXXX_organizer



9. Right-click on a column header and select **Rename** option to rename it (alternatively, double left-click a column header OR use F2 button)



Rename columns accordingly:

a. crXXX_name -> Display Name

b. crXXX_description -> Description

c. crXXX_startdate -> Start Date

d. crXXX_enddate -> End Date

e. crXXX_awardpoints -> Points

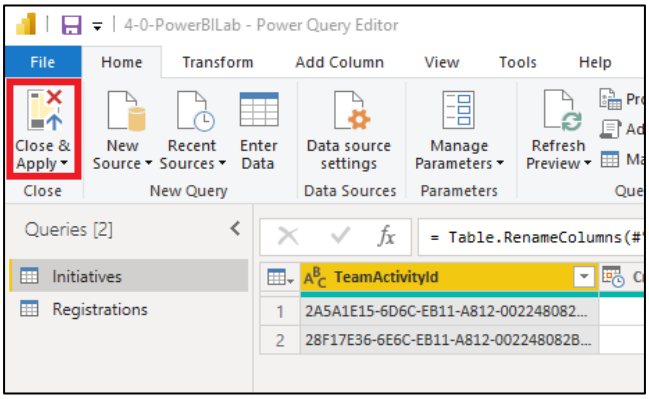
f. crXXX_imageurl -> Image URL

g. crXXX_intraneturl -> Intranet URL

h. crXXX_teamactivity -> TeamActivityId

i. crXXX_organizer -> Organizer

10. Click **Close & Apply** to apply the transformations

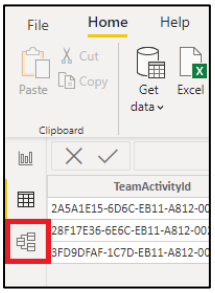


Note: *Notice that Power Query Editor is closed now, and you returned to Power BI main interface.*

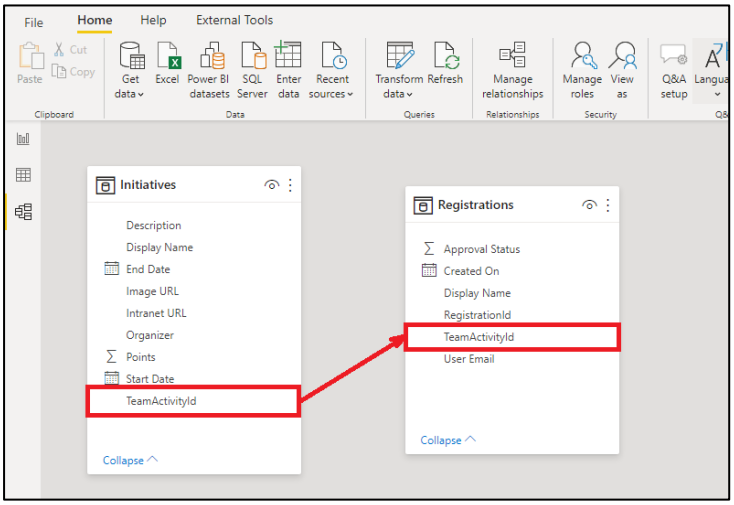
Task is completed.

Task 4: Build a data model

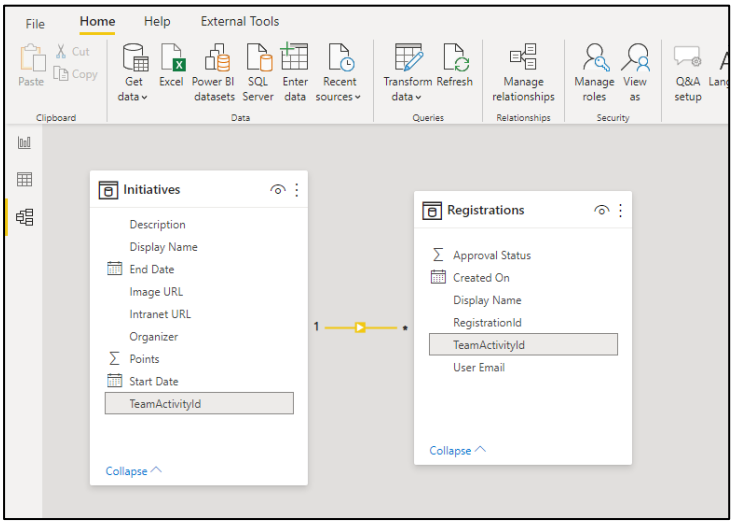
1. In left pane select **Model**



2. If there's no active relationship between **Initiatives** and **Registrations** entities, then drag-n-drop **TeamActivityId** from one entity to another to create a relationship.

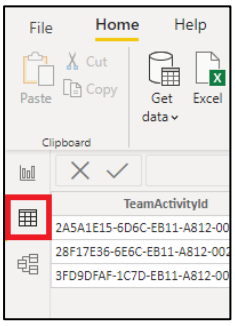


3. The resulting one-to-many relationship should look like this:



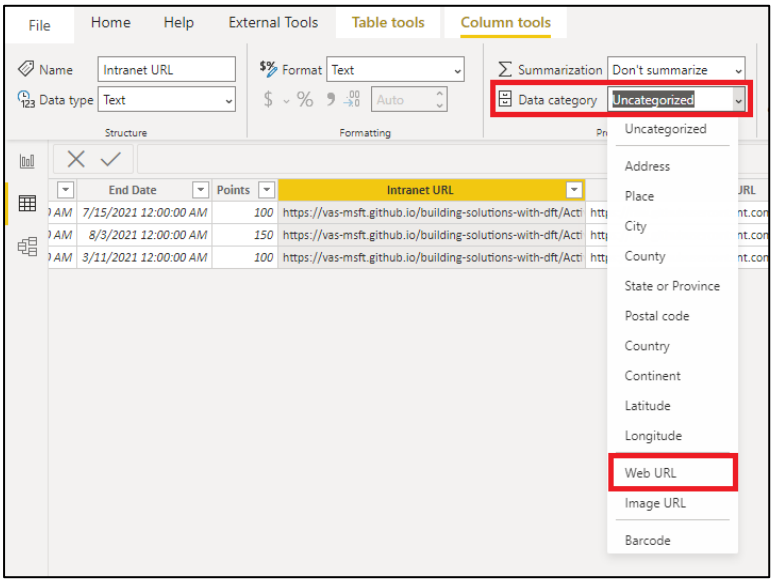
Note: *we will use this relationship to easily implement cross-filtering in a report*

4. In left pane select **Data**



5. To make Intranet URLs clickable in the report, select **Intranet URL** column

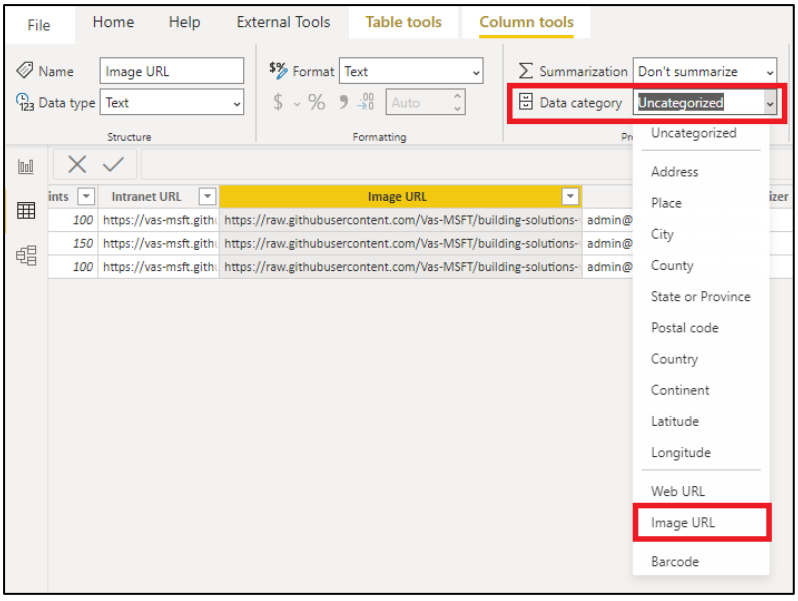
   In ribbon set **Data category** as **Web URL**



   In report Power BI visuals will display this column's data as clickable URLs now, not just as a plain text.

6. To make Image URLs displayed as images, select **Image URL** column

   In ribbon set **Data category** as **Image URL**



In report Power BI visuals will display this column's data as images now, not just as a plain text.

Task is completed.

Exercise 2:
Build and publish a report

Objectives:

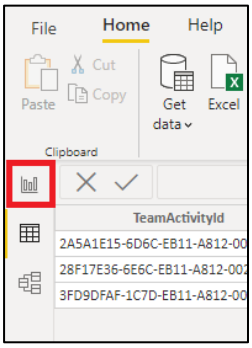
- Explore Power BI visualizations
- Publish a report to Power BI service
- Configure data refresh
- Embed report into Microsoft Teams

Estimated time:

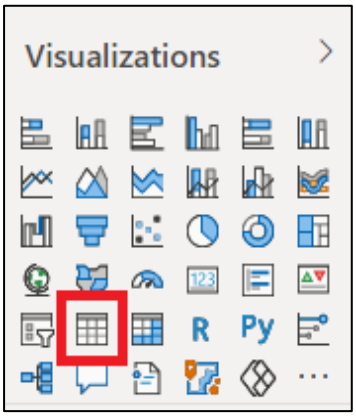
30 minutes

Task 1: Build a report - Table

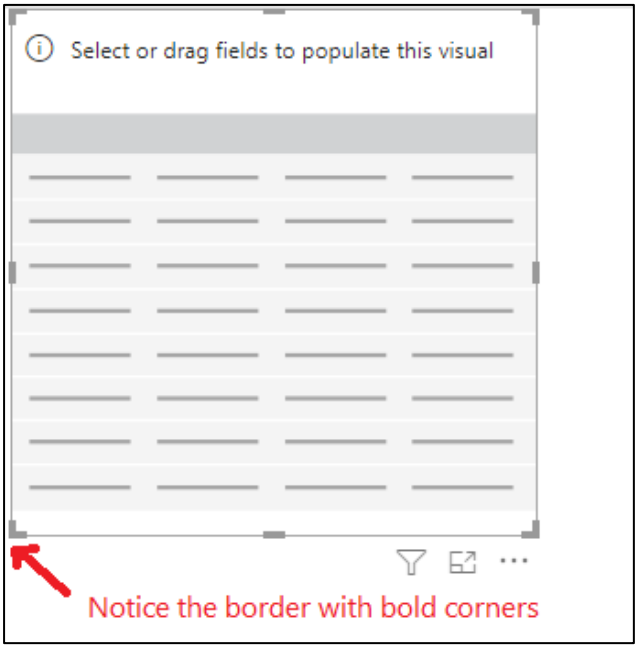
1. In left pane select **Report**



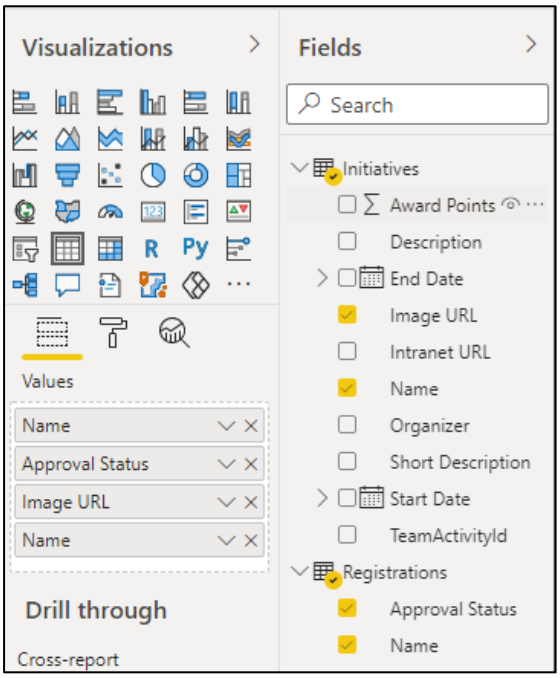
2. In **Visualizations**, select **Table** visual



3. Make sure that the **Table** visualization is selected. You will see a border with bold corners around the visualization if it's selected.



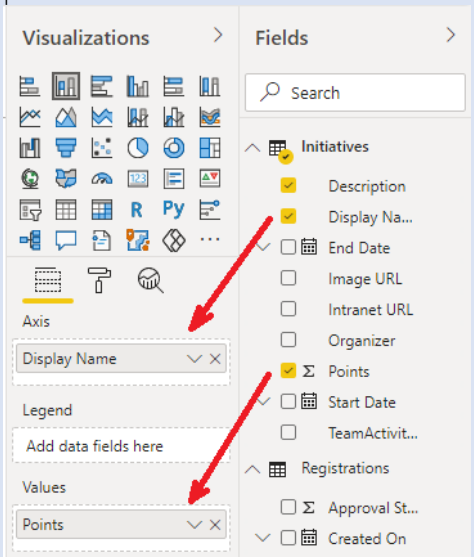
4. In **Fields** pane,
   expand **Registrations** and select **Name, Approval Status** fields,
   expand **Initiatives** and select **Image URL**, **Name**



Adding data to a visualization

There are multiple ways of how you can add data to a visualisation:

1) Select a visualization and check boxes in Field pane, just as we did in step 4.
2) Drag-n-drop field from the Fields pane to the visualization, where you want to add the data.
   Methods 1 and 2 work well for a simple visualization like Table or Card.
3) Select a visualization and drag-n-drop fields from the Fields pane to appropriate placeholders of the selected Visualization.

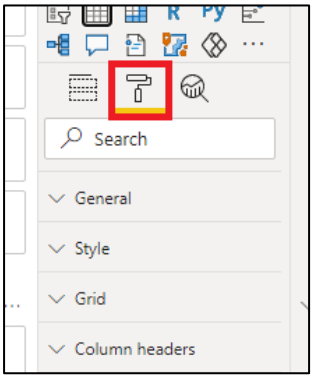


5. **Resize** the table to fit more columns by dragging the corner of the visualization.

   Notice that images are displayed according to data categorization.

   Result may look like this:

6. Explore and try out some of Table's **Format** options.

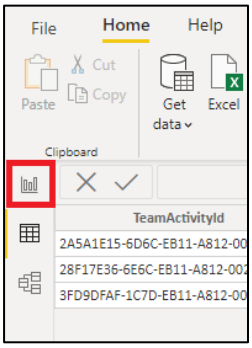


7. Save your report by pressing **Ctrl+S** or through **File -> Save** menu

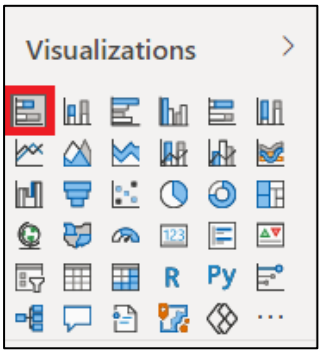
   Task is completed.

Task 2: Build a report – Bar chart

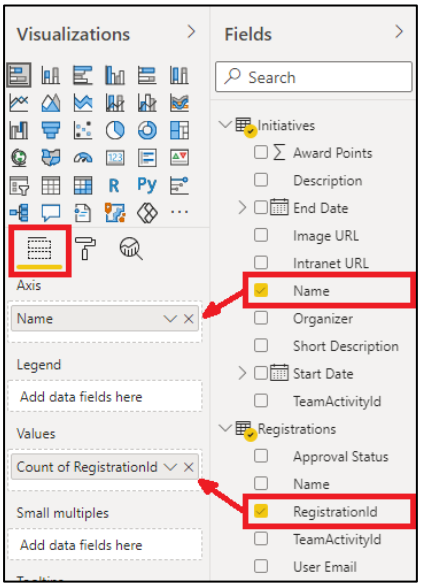
1. In left pane select **Report** (if it's not selected)



2. In **Visualizations**, select **Stacked bar chart** visual

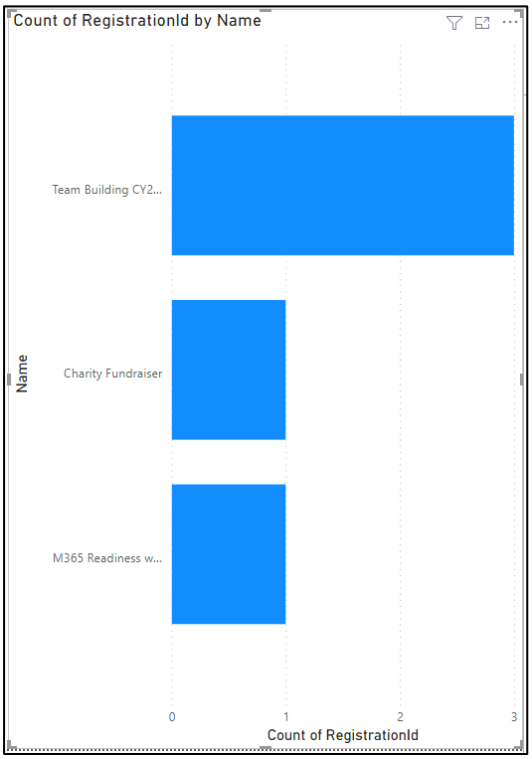


3. Make sure that Bar chart visual is selected and in **Fields** pane,
   - expand **Initiatives** and drag-n-drop **Name** to **Axis**,
   - expand **Registrations** and drag-n-drop **RegistrationId** to **Values**

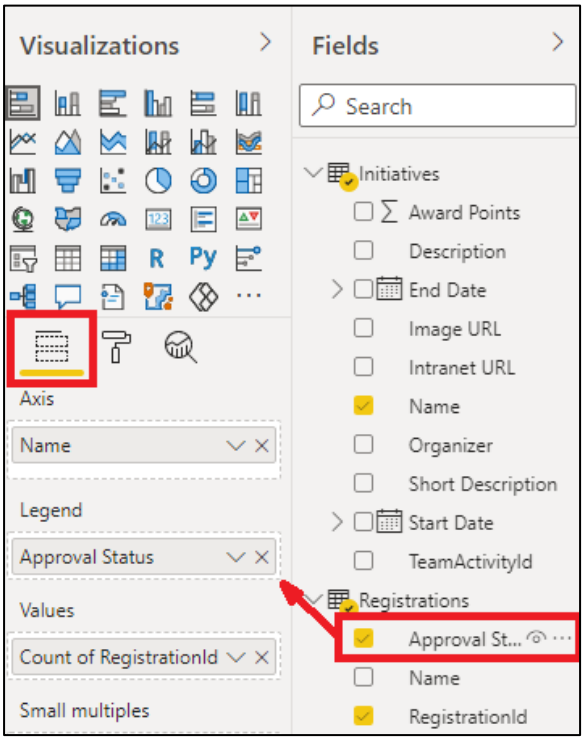


Notice, that **RegistrationId** becomes **Count of RegistrationId**

You Bar Chart should look like this:

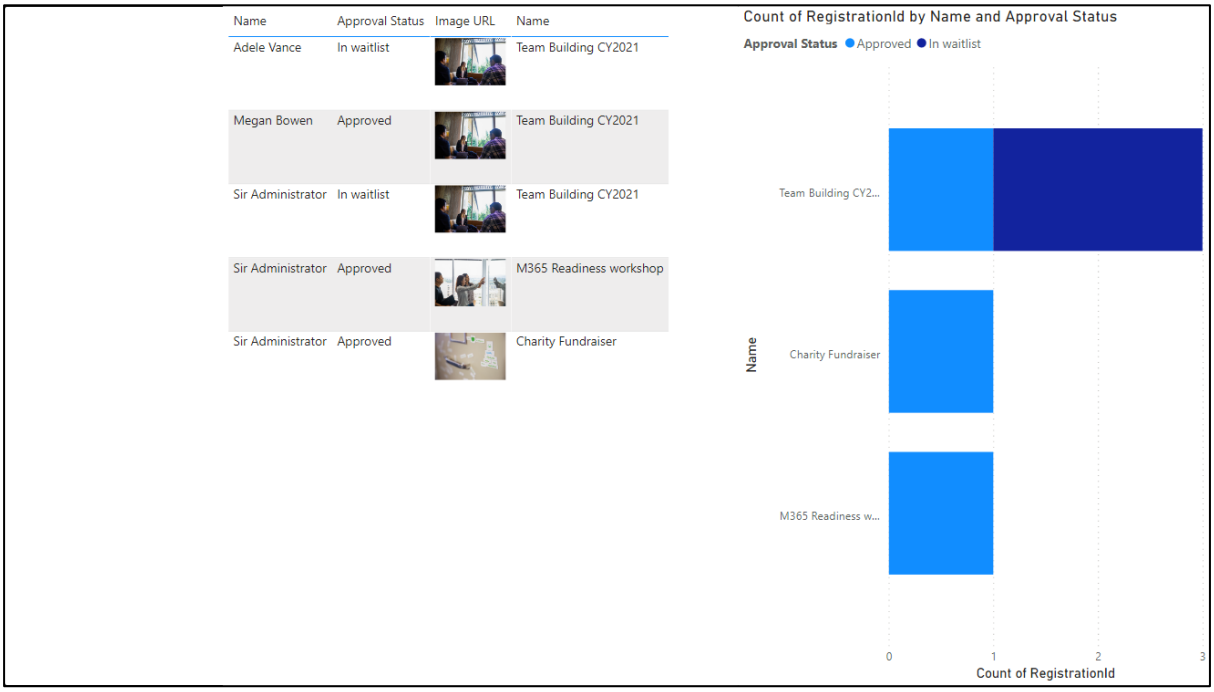


4. In **Fields** pane,
   expand **Registrations** and drag-n-drop **Approval Status** to **Legend**

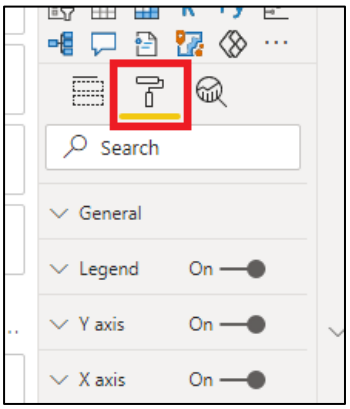


Notice that bar charted is now stacked and contains approval status information.

5. Resize and align **Bar chart** visual in any way you like.
   Your report page may look like this:



6. Explore and try out some of Bar chart's **Format** options.

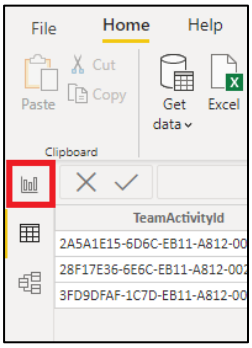


7. Save your report by pressing **Ctrl+S** or through **File -> Save** menu

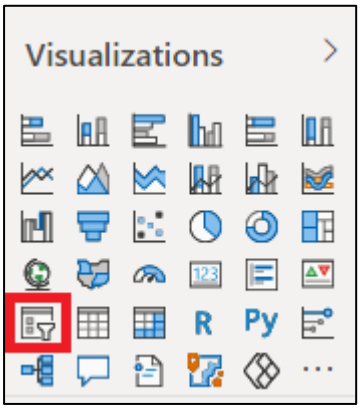
   Task is completed.

Task 3: Build a report – Slicer

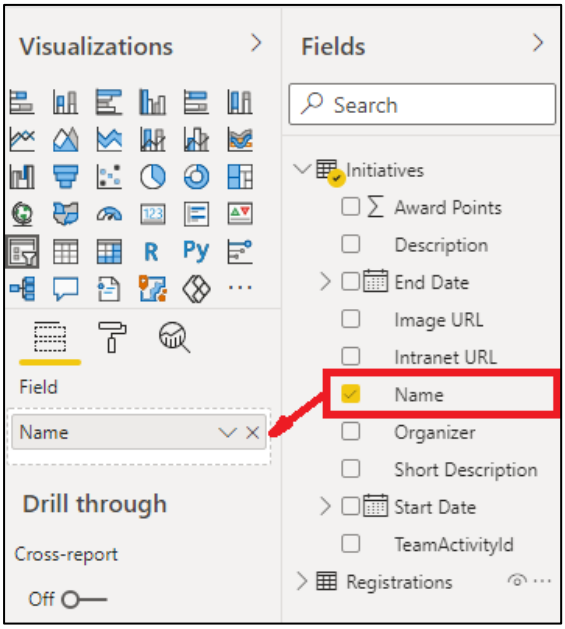
1. In left pane select **Report** (if it's not selected)



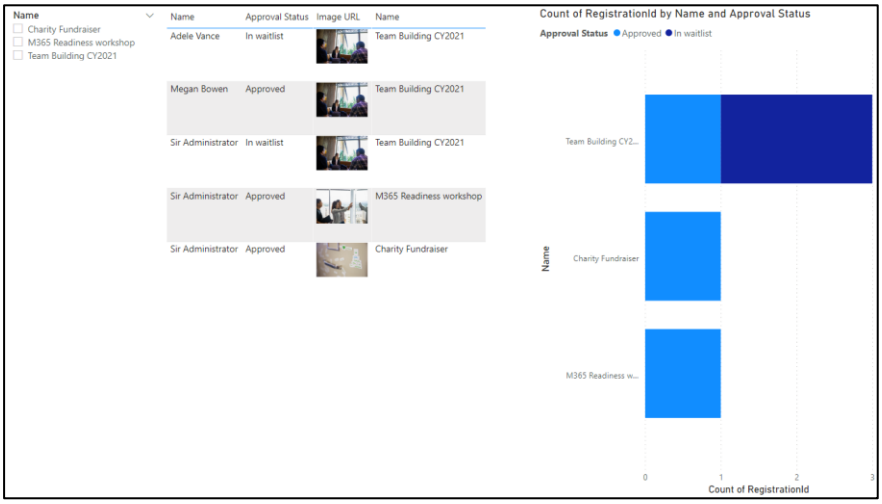
2. In **Visualizations**, select **Slicer** visual



3. Make sure **Slicer** visual is selected.
   In **Fields** pane, expand **Initiatives** and select **Name**

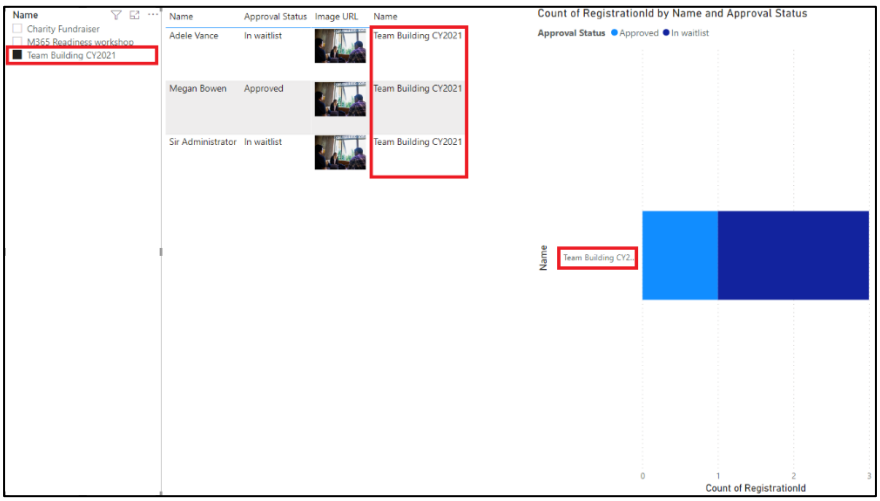


4. Resize and align **Slicer** visual in any way you like.
   Your report page may look like this:



5. Try clicking on Slicer options, notice how report changes.

   For example:



   Filtering works automatically, because we defined relationships and cross-filtering direction between **Initiatives** and **Registrations**.

6. Feel free to experiment with your data and any additional visualizations.

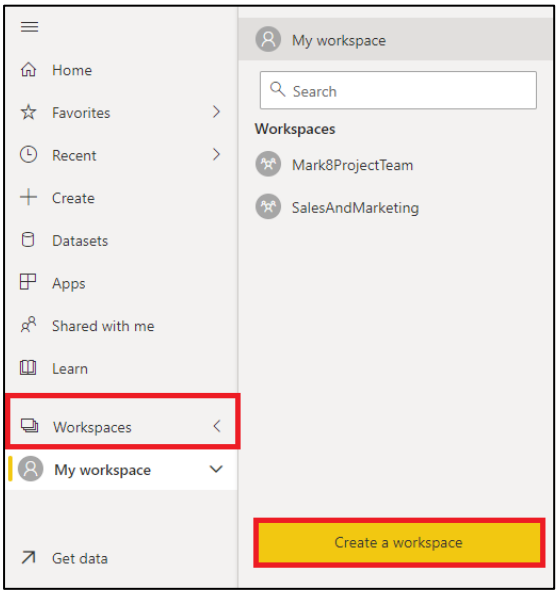
   Try out Slicer's **Format** options.

7. Save your report by pressing **Ctrl+S** or through **File -> Save** menu

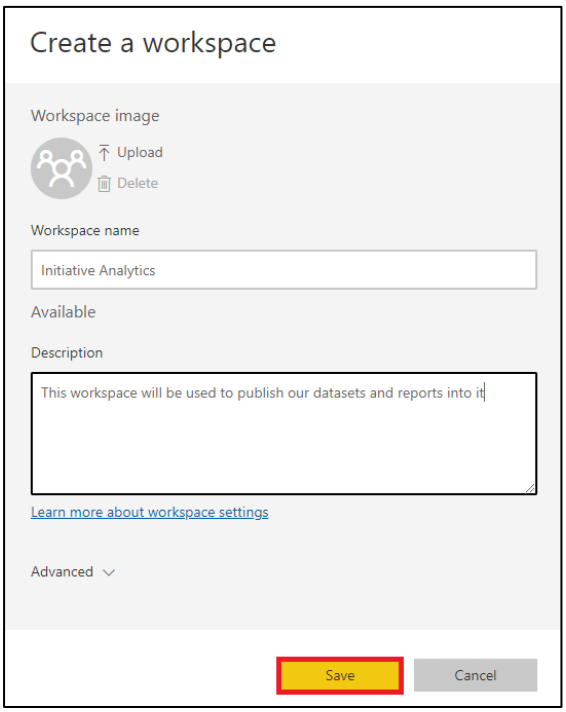
   Task is completed.

Task 4: Prepare a Power BI workspace

1. In **InPrivate/Incognito** browser mode, while logged in into your **M365xXXXXXX lab tenant**, navigate to https://app.powerbi.com
2. In the left navigation select **Workspaces** and click **Create a workspace** button



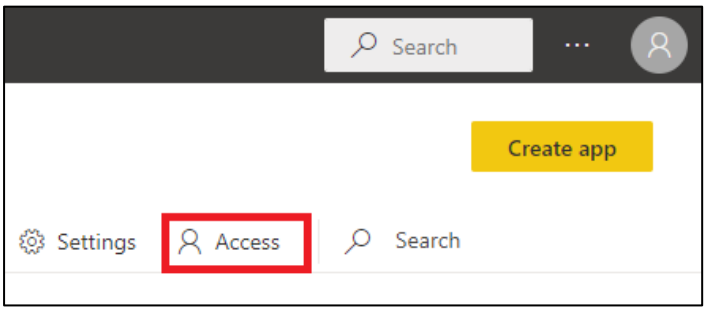
3. In workspace creation dialog, set **Workspace name** as Initiative Analytics and click **Save** button



A newly created workspace should get opened in a moment.

4. Let's add our team members to be able to view content in this workspace.

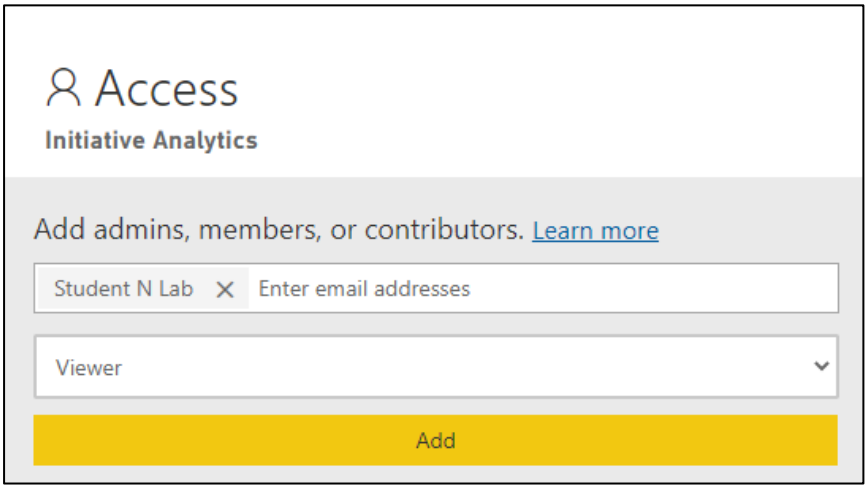
   Click **Access** button



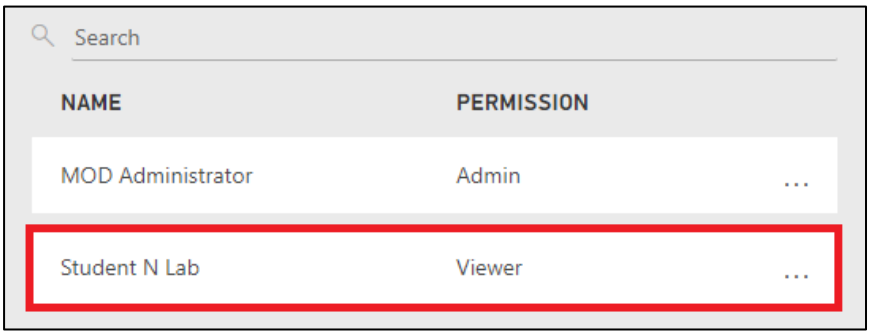
5. **Select** your team in a people picker (e.g., Student N Lab)

   Set permission level as **Viewer**

   Click **Add** button



   Make sure, that your team was added as **Viewer** after you clicked **Add** button.

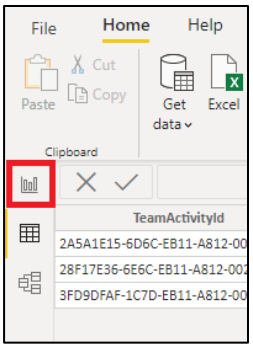


   Task is completed.

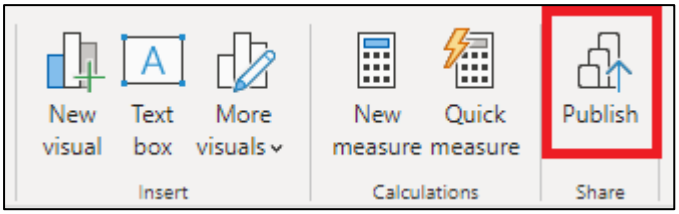
Task 5: Publish a Power BI report and set up data refresh

1. Go back to **Power BI Desktop** or open your report once again if you closed it.
2. Make sure that Power BI Desktop is logged into your lab M365 tenant

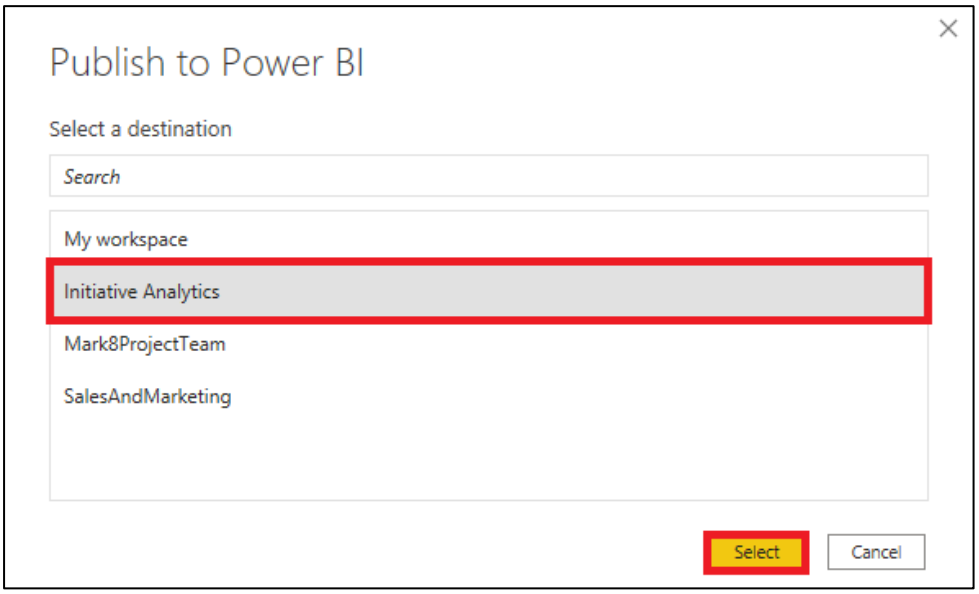
3. Make sure that you are in **Report** mode



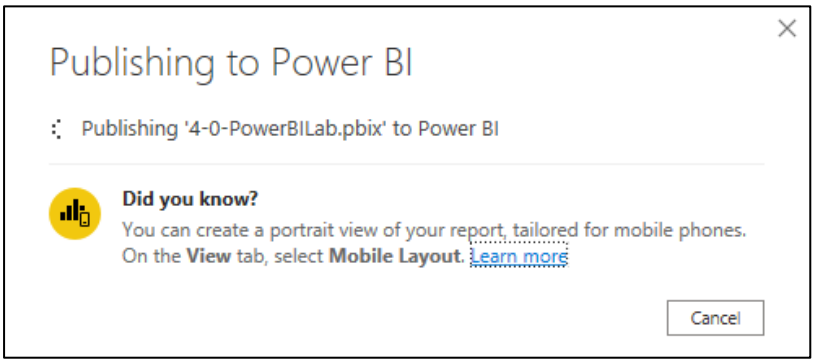
4. In ribbon click **Publish** button



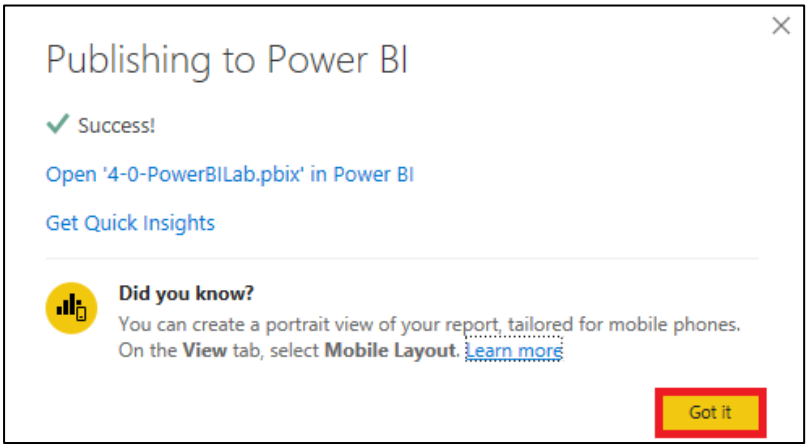
5. In Publish to Power BI dialog **choose** *Initiative Analytics* workspace (that was created in the previous task) and click **Select** button



6. Wait until the report will get published to Power BI service



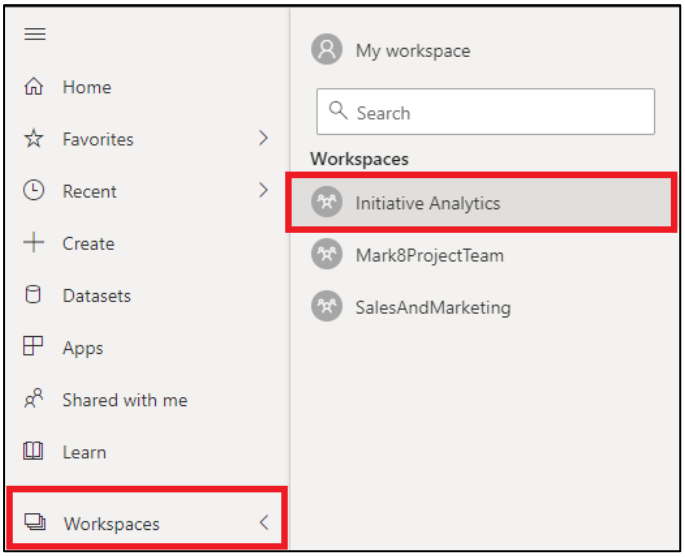
Click **Got it** when it's finished



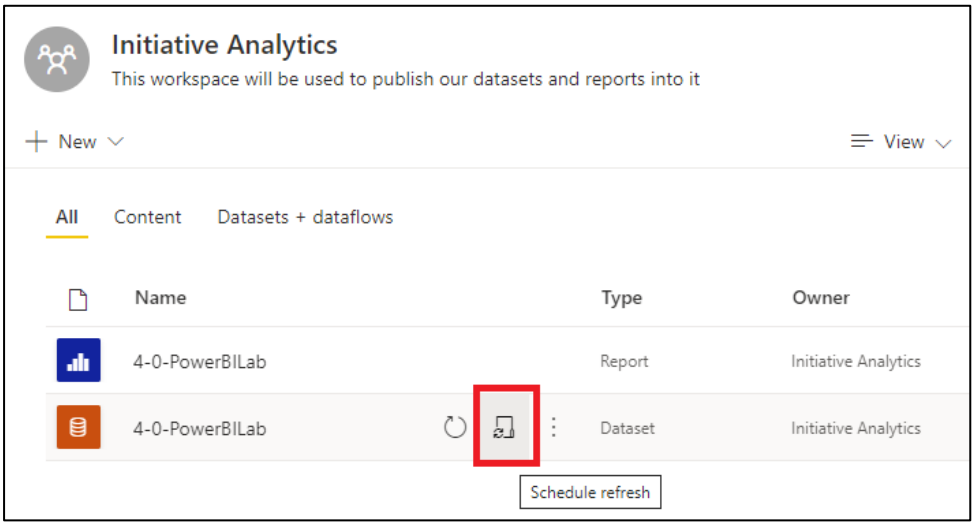
Report and dataset should be published to Initiative Analytics workspace now.

7. In **InPrivate/Incognito** browser mode, while logged in into your **M365xXXXXXX lab tenant**, navigate to https://app.powerbi.com

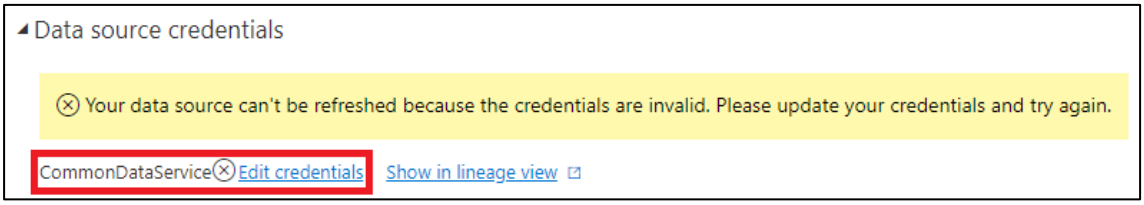
8. In the left navigation select **Workspaces** and choose *Initiative Analytics* workspace



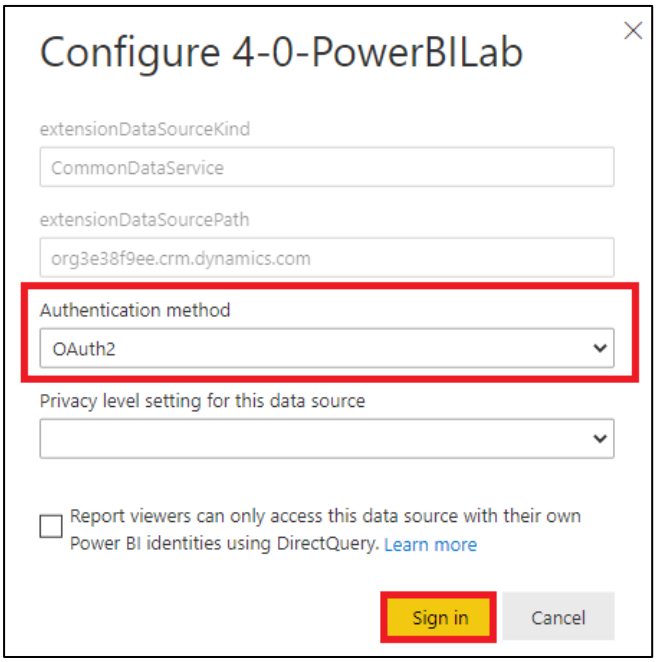
9. You should see that report and dataset are published into this workspace. Hover a cursor over a dataset and click on **Schedule refresh** icon 



10. Notice that data refresh is not working, because Power BI Service do not have credentials, that will be used to update the data in this dataset. Click **Edit credentials**



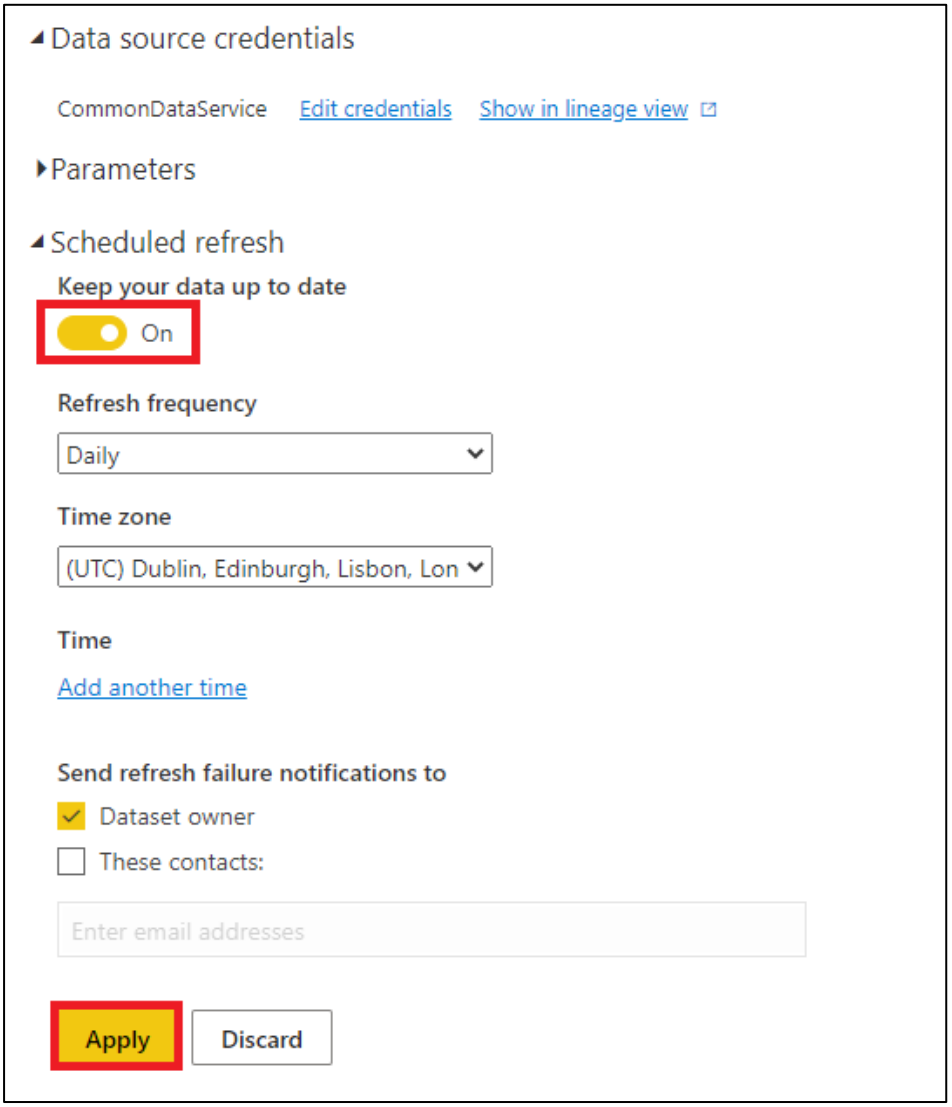
11. In Configure dialog, make sure that *OAuth2* is selected as an authentication method and click **Sign in** button



12. Use your lab tenant credentials for data refresh e.g., admin@m365xXXXXXX.onmicrosoft.com
(please, replace xXXXXXX with your tenant prefix)

13. After refresh credentials are set up, expand **Scheduled refresh** settings and switch on **Keep your data up to date**

    Click **Apply** button to set up default daily refresh

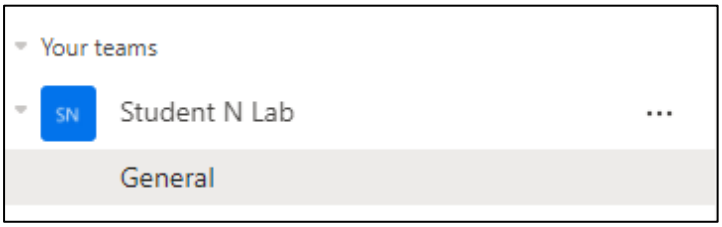


Data in your report will automatically get refreshed from Dataverse for Teams tables on daily basis.

Task is completed.

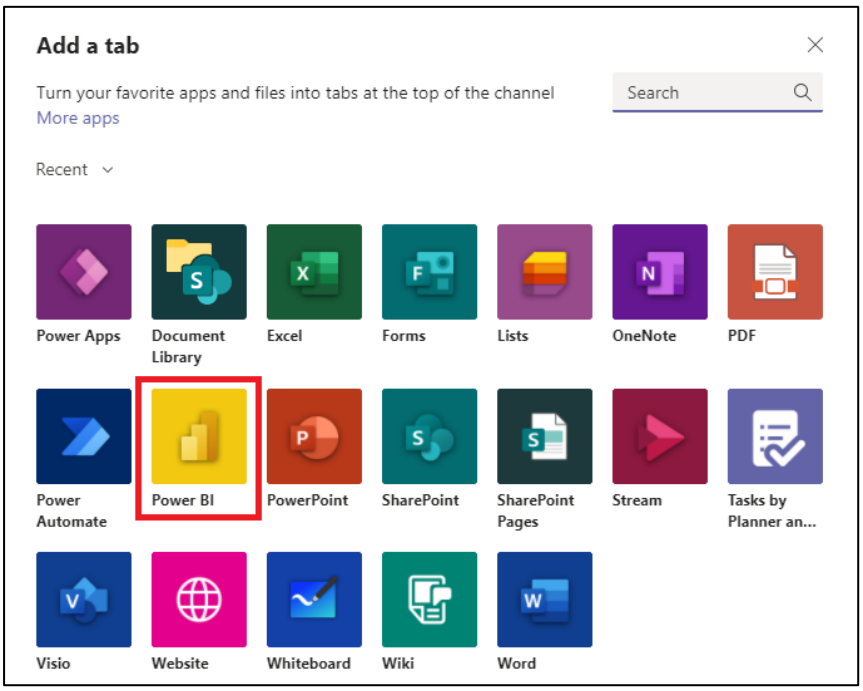
Task 6: Embed a report to Microsoft Teams

1. In **InPrivate/Incognito** browser mode, while logged in into your **M365xXXXXXX lab tenant**, navigate to https://teams.microsoft.com
2. Select your Team's **General** channel:



3. On the top of the chat, click **+** to add a new channel tab

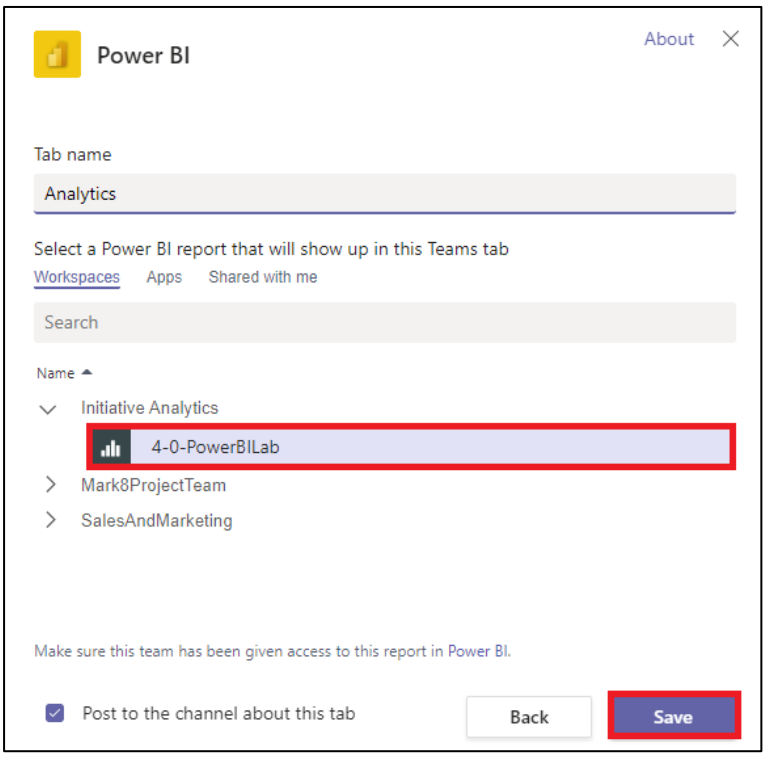
4. In Add a tab dialog, select **Power BI**



5. Set **Tab name** as *Analytics*

   Expand *Initiative Analytics* workspace and **select your report**

   Click **Save** button



6. Your report should get opened as a tab in your team channel.

   Task is completed.