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1) Different Versions of Power BI (Different Power BI Products) Available from Microsoft :

1) Microsoft web site link for Power BI Products:

<https://powerbi.microsoft.com/en-us/pricing/>

2) Versions of Power BI (Different Power BI Products):

i. Power BI Desktop

1. Price: Free
2. Connect to hundreds of data sources
3. Clean and prepare data using visual tools
4. Analyze and build reports with custom visualizations
- 5. Publish to the powerbi.com**
- 6. Can share “.pbix” file so others with the “free” Power BI Desktop can view.**
- 7. Create Web Embed Code you can post at Public web site.**

ii. Power BI Pro

1. \$9.99, per user, per month
2. Build dashboards that deliver a 360-degree, real-time view of the business
3. Keep data up-to-date automatically, including on-premises sources
4. Collaborate on shared data
5. Audit and govern how data is accessed and used
6. Package content and distribute to users with apps
- 7. Publish to powerbi.com and have others view on any device.**
8. From published report viewers can download Data Model into Excel or as a “.pbix” file. (Implicit Measures will not download into an Excel file).

iii. Power BI Premium

1. Price: Negotiated per node, per month
2. Share data with users inside and outside your organization without purchasing a per-user license
3. Allocate, control, and manage your dedicated server capacity
4. Unlock higher limits for Pro users with datasets up to 10 GB and refresh up to 48 times per day
5. Access interactive and paginated reports online or use **Power BI Report Server for on-premises reporting**
6. Deploy in the geographic region of your choice

2) Download Power BI Desktop :

i. Microsoft Download Page: <https://www.microsoft.com/en-us/download/details.aspx?id=45331>

1. When you want to update each month, you have to re-download and re-install.

ii. Microsoft Windows Store: <https://powerbi.microsoft.com/en-us/desktop/>

1. This download will automatically update each month.

3) Difference between Power BI Desktop and Power BI Online (powerbi.com) :

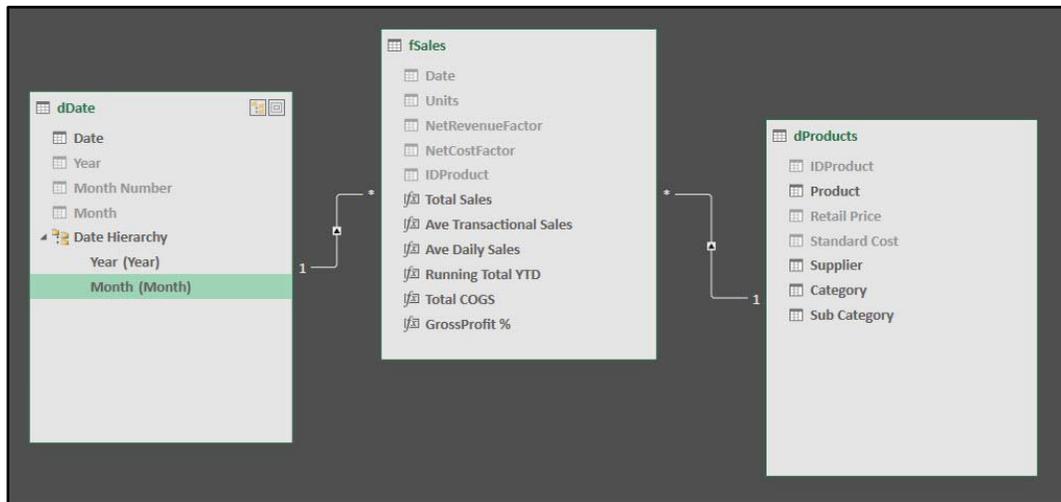
1. Power BI Desktop
 - 1.Free Download
 - 2.We can import data and create data model.
 - 3.We can import full Data Model and Power Query Queries from an Excel Workbook.
 - 4.We can create reports with visuals on tabs (pages).
 - 5.We can use the file to analyze or email the “.pbix” file to someone else who has Power BI Desktop.
 - 6.We can publish Report to Power BI Online (powerbi.com).
2. Power BI File “.pbix”:
 - 1.Report = Power BI file:
 - i. Created with Power BI Desktop
 - ii. Contains:
 - The Tabs (Pages)
 - The Data Model connected to the Columnar Database.
 - 2.Data Model contains:
 - i. Tables that are stored in Columnar Database.
 - ii. Relationships between tables.
 - iii. DAX Formulas.
 - iv. Hierarchies.
 - 3.Tab (Page) in Power BI File = A Page with a set of visuals.
3. Power BI Online (powerbi.com)
 - 1.Free Version or paid version, like Power BI Pro.
 - 2.We can import Data Sets (Data Models) from:
 - i. A Power BI Desktop “.pbix” file
 - ii. An Excel File.
 - 3.We can import Power BI Desktop Files “.pbix” files and all the Tabs with visuals.
 - 4.We can Import an Excel file to view the Excel Worksheet Tabs with Excel Online.
 - 5.We can create Workspaces that can hold: Dashboards, Reports, Excel Workbooks and Data Sets (Data Models).

4) Power BI Online (powerbi.com): Dashboards, Reports, Excel Workbooks and Data Sets :

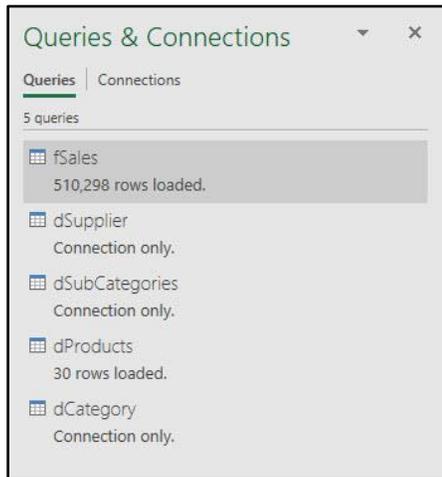
1. We can create Workspaces that can hold: Dashboards, Reports, Excel Workbooks and Data Sets (Data Models).
2. Here is a description of each:
 1. Workspace = collection of Dashboards, Reports, Workbooks and Data Sets for a specified set of people (e-mail addresses).
 2. Dashboard = a place to pin Pages (Tabs) from a Power BI Report, Excel Worksheets from an Excel Workbook, or individual visuals from either a Power BI Report or an Excel Worksheet.
 3. Reports = list of published “.pbix” files.
 4. Workbooks = published Excel Workbooks that we can view in Excel Online.
 5. Data Set in Power BI Report = a single Data Model.
 - i. Each Power BI Report is connected to One Data Set.
 - ii. Each Excel Workbook is connected to one Data Set.
 - iii. Dashboards can be connected to Tabs from different Reports and Excel Workbooks and thus different Data Sets.

5) Send Excel Power Pivot Data Model & Power Queries to Power BI Desktop :

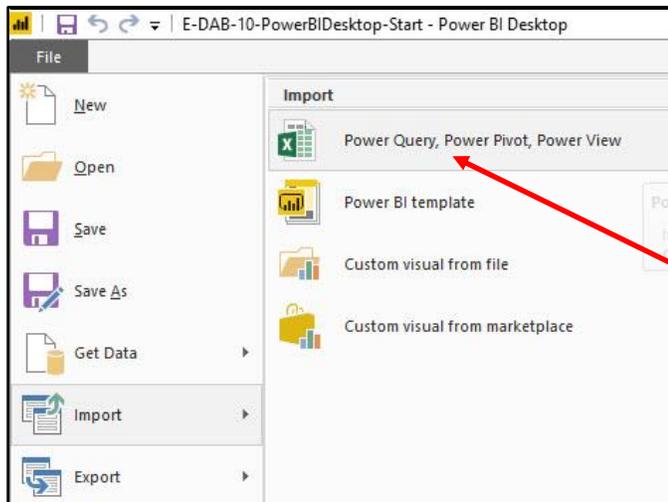
1. Here is a picture of the Data Model in the Excel Workbook named “E-DAB-10-ExcelFileWithDataAndReports.xlsx”:



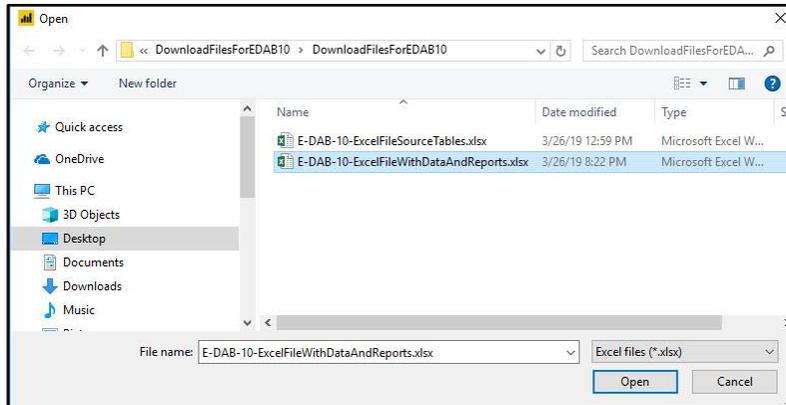
2. Here is a picture of the Queries created with Power Query in the Excel Workbook named “E-DAB-10-ExcelFileWithDataAndReports.xlsx”:



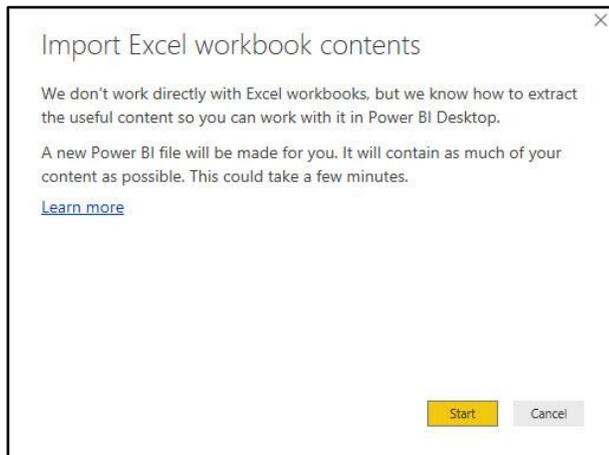
3. To import the Power Pivot Data Model and the Power Query Queries, open the Power BI Desktop file with the name “E-DAB-10-PowerBIDesktop-Start.pbix”, go to the File menu, then hover over the Import option, then click on the “Power Query, Power Pivot, Power View” button, as seen here:



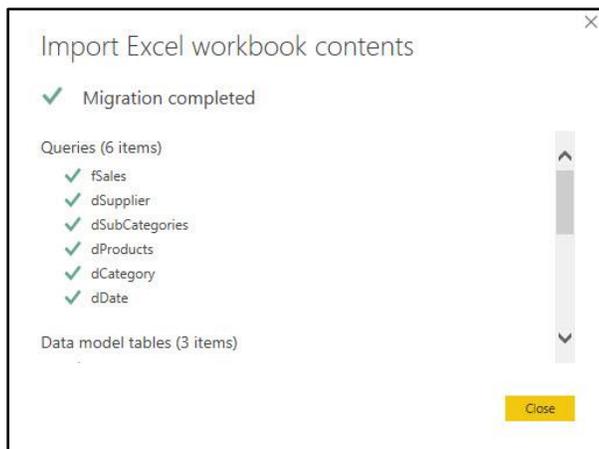
4. Select the downloaded file “E-DAB-10-ExcelFileWithDataAndReports.xlsx”, then click Open, as seen here:



5. Click the “Start” button in the next dialog box, as seen here:



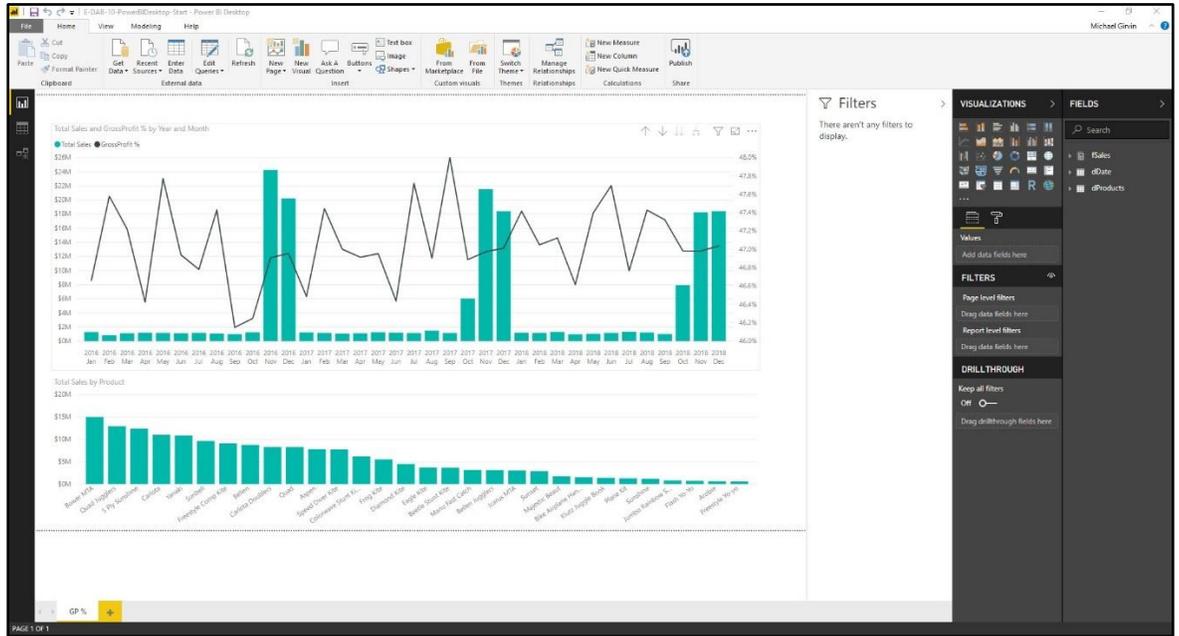
6. In the next window, click “Close” , as seen here:



7. Note: Excel Files with the extension “.xlsm” can not be imported into a Power BI Desktop File.

6) Create Power BI Visualizations based on Excel Data Model :

1. From the skills we learned last video, create a Power BI Desktop Page, as seen here:

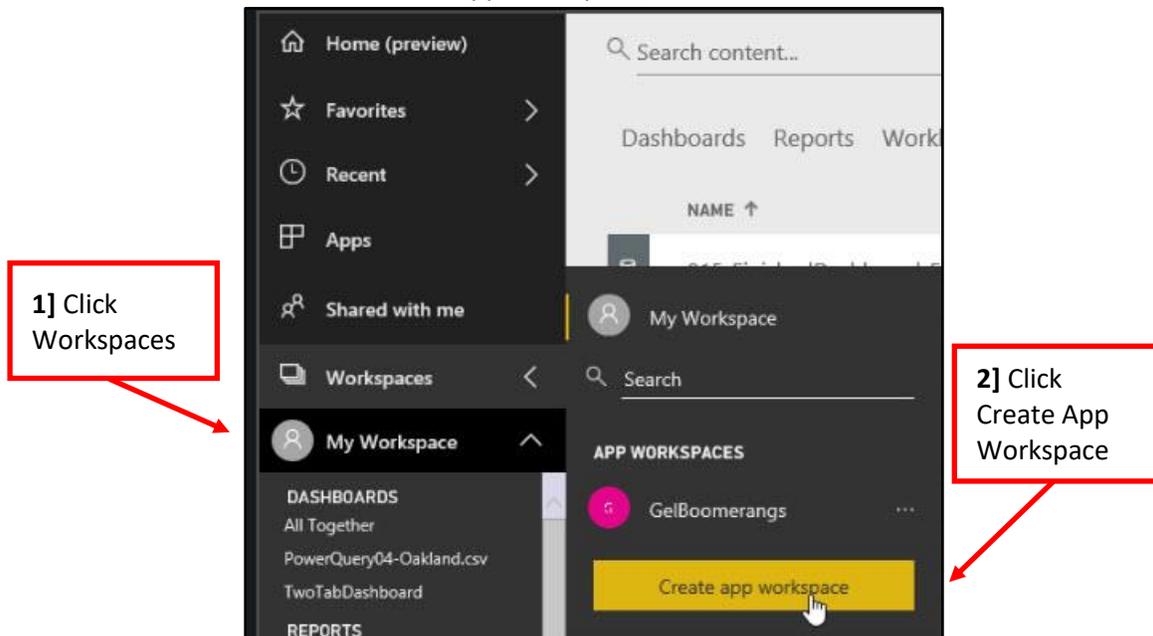


7) Sign in to powerbi.com :

1. If you are a Highline College Matriculating Student, you can use your Highline User Name and Password to log in.
2. If you are a YouTuber watching and learn about powerbi.com, you will need to sign up for a 60-day free trial to use Power BI at powerbi.com (as seen in video at 5:20 minute mark).

8) Create Workspace at powerbi.com :

1. Workspace = collection of Dashboards, Reports, Workbooks and Data Sets for a specified set of people (e-mail addresses).
2. To create Workspace:
 1. On the left click "Workspaces".
 2. Then click on Create App Workspace, as seen here



3. Name the Workspace.
4. Create Privacy Settings.
5. Edit Privileges?
6. Add e-mails for people who can join workspace.
7. Click Save.

The screenshot shows the 'Edit workspace' interface with the following elements and callouts:

- 3] Name Workspaces:** Points to the 'Name' input field containing 'MSPTDA'.
- 4] Privacy Settings:** Points to the 'Privacy' dropdown menu showing 'Public - Anyone can see what's inside'.
- 5] Edit Privileges?:** Points to the 'Members can edit Power BI content' checkbox.
- 6] Add e-mails for people who can join workspace:** Points to the 'Enter email addresses' input field.
- 7] Save:** Points to the 'Save' button at the bottom of the interface.

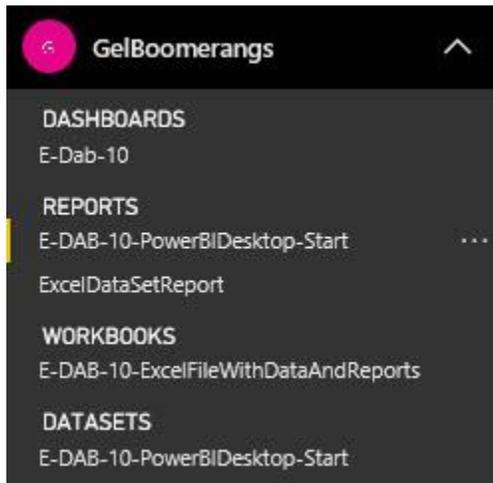
The interface includes a 'Workspace members' section with a table of current members:

Email Address	Role	Actions
excelisfun_gmail.com#ext#@highline...	Member	Dropdown, Delete
mgirvin@highline.edu	Admin	Dropdown, Delete

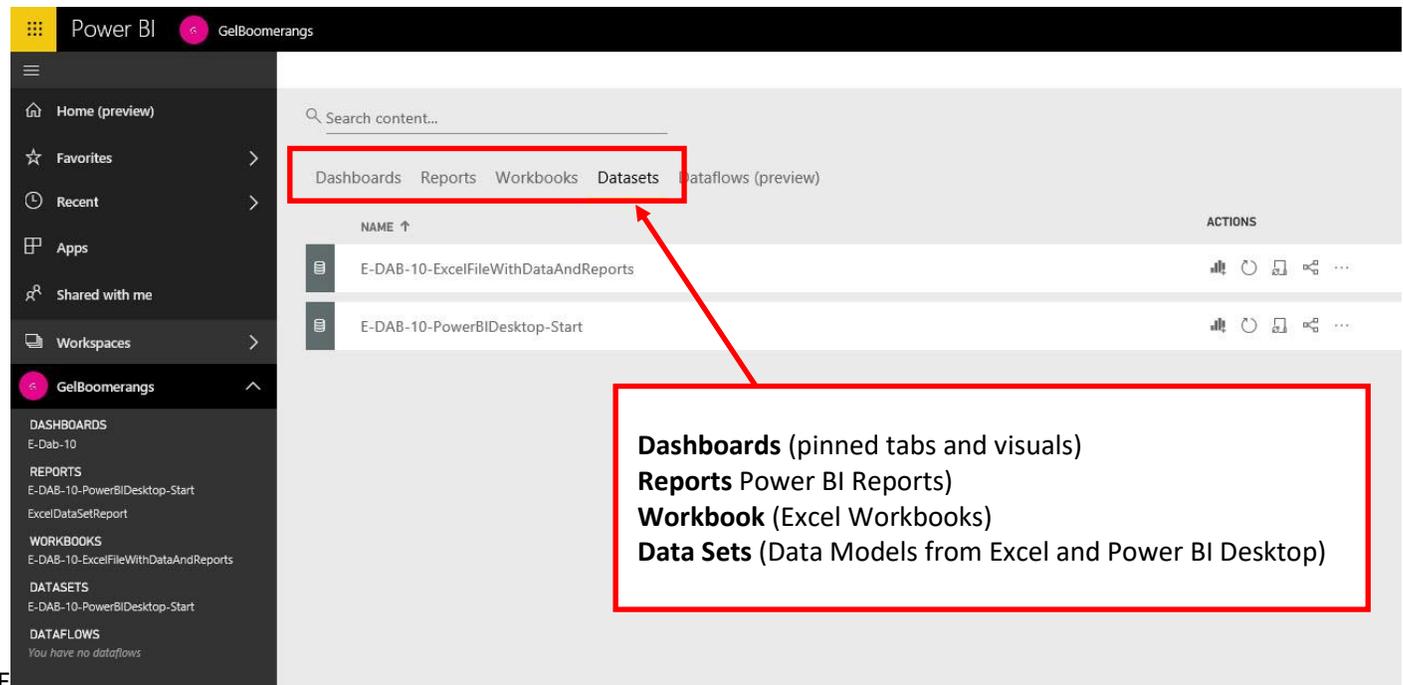
At the bottom, there are three buttons: 'Delete workspace', 'Save', and 'Cancel'.

9) Different Sections of a Workspace :

1. After selecting a Workspace, on the left of Power BI Online (powerbi.com), you can see the four sections: Dashboards (pinned tabs and visuals), Reports (Power BI Reports), Workbook (Excel Workbooks), Data Sets (Data Models from Excel and Power BI Desktop), as seen here:

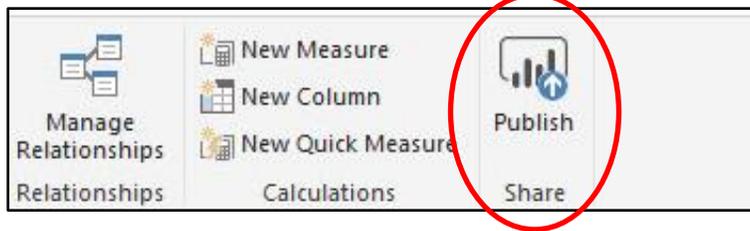


2. After clicking on a Workspace on the left side of Power BI Online (powerbi.com), in the middle of Power BI Online (powerbi.com), you can see the four sections, as seen below:

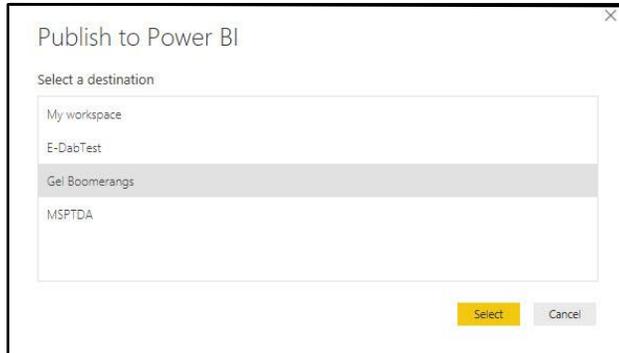


10) Publish Power BI Desktop Report (Power BI File “.pbix”) to Power BI Online (powerbi.com) :

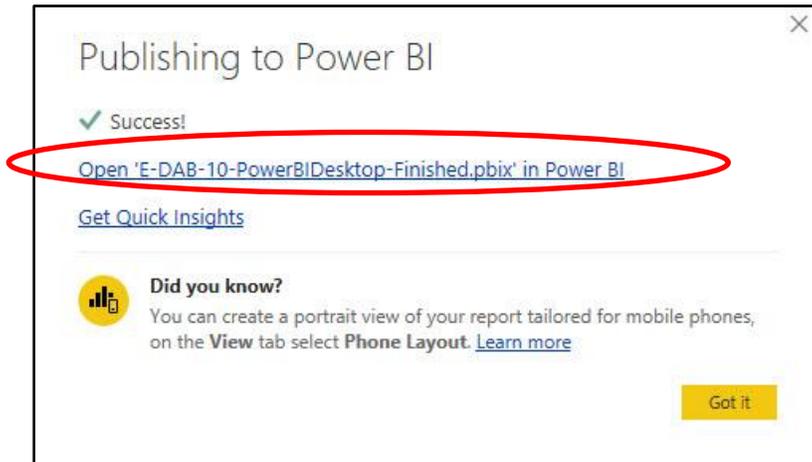
1. In the Power BI Desktop file (“.pbix” file), use the , as seen here:



2. In the next dialog box, select the Workspace that you want to publish the Report to and then click “Select”, as seen here:

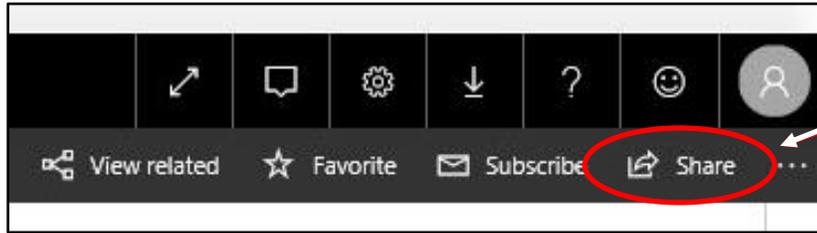


3. In the next dialog box you can click the link to jump to Power BI Online (powerbi.com), as seen here:

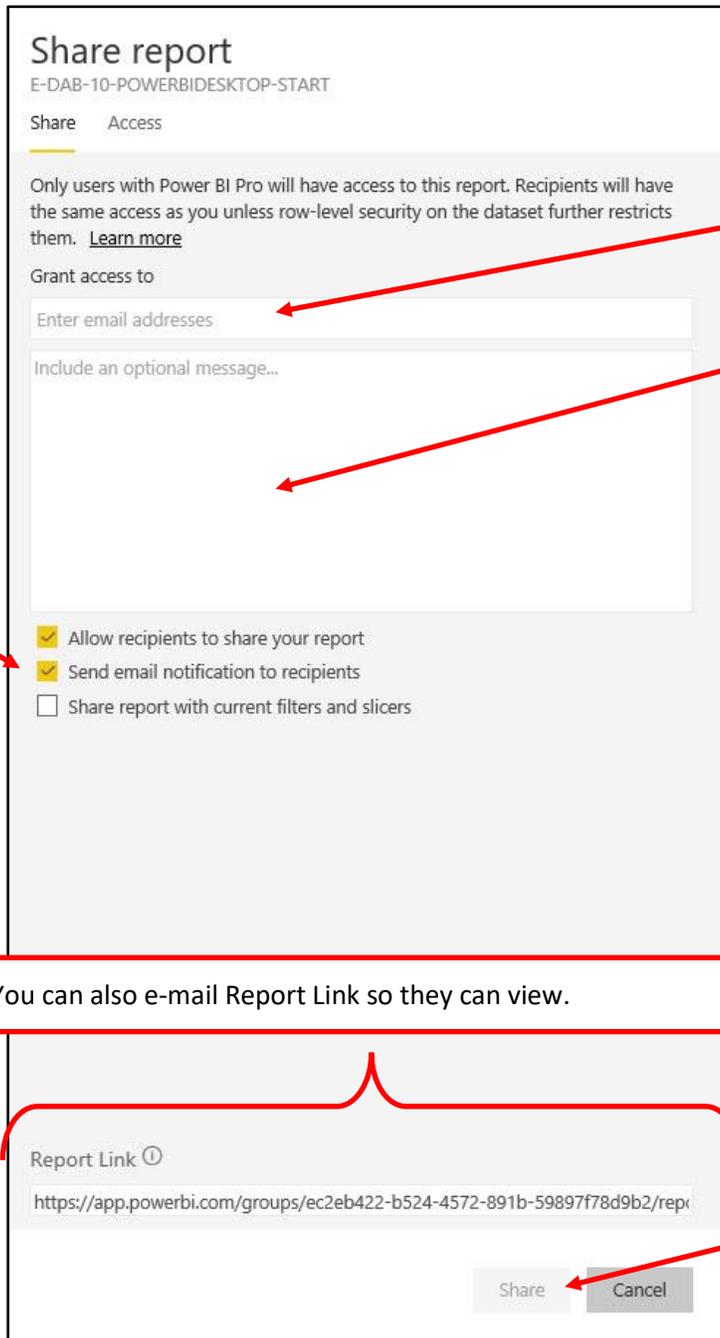


11) Share Report with others so that they can view on any device :

1. With your Power BI Report showing at Power BI Online (powerbi.com), in the upper right corner, click the Share button, as seen here:



2. Below is the Share Window:



1] E-mails for people you want to share Report.

2] E-mail message.

3] Send E-mail

You can also e-mail Report Link so they can view.

4] Share button

12) Publish Excel file to Workspace (Worksheet Reports and Data Model) :

1. In Excel go to File Menu.
2. Then click on Publish.
3. Select Workspace.
4. In the Publish to Power BI window select one of these options:
 1. Upload your workbook to Power BI
 - i. You can't edit your workbook when open in Power BI.
 - ii. When you upload, the Data Model is uploaded.
 - iii. Your workbook will appear in Reports.
 - iv. Choose this option if want to see your worksheets, PivotTables and Charts at Power BI Online (powerbi.com) web site using Excel Online.
 2. Export workbook data to Power BI
 - i. The Excel Power Pivot Data Model is exported into a new dataset in Power BI.
 - ii. If you have any Power View sheets, those will be re-created in Power BI as reports.
 - iii. You can then build a new Power BI Report in the Power BI Online Edit mode.

The screenshot shows the 'Publish to Power BI' dialog box in Excel. The 'File' menu is highlighted with a red box and labeled '1] File Menu'. The 'Publish' option in the File menu is highlighted with a red box and labeled '2] Publish'. The 'Publish to Power BI' dialog box is open, showing the 'Publish to Power BI' title bar. The 'Select where you'd like to publish to in Power BI:' dropdown menu is highlighted with a red box and labeled '3] Select Workspace', with 'Gel Boomerangs' selected. The 'Upload' and 'Export' options are visible. A red box labeled '4] 2 ways to Publish:' is positioned to the right of the 'Upload' and 'Export' options, with a bracket indicating both options.

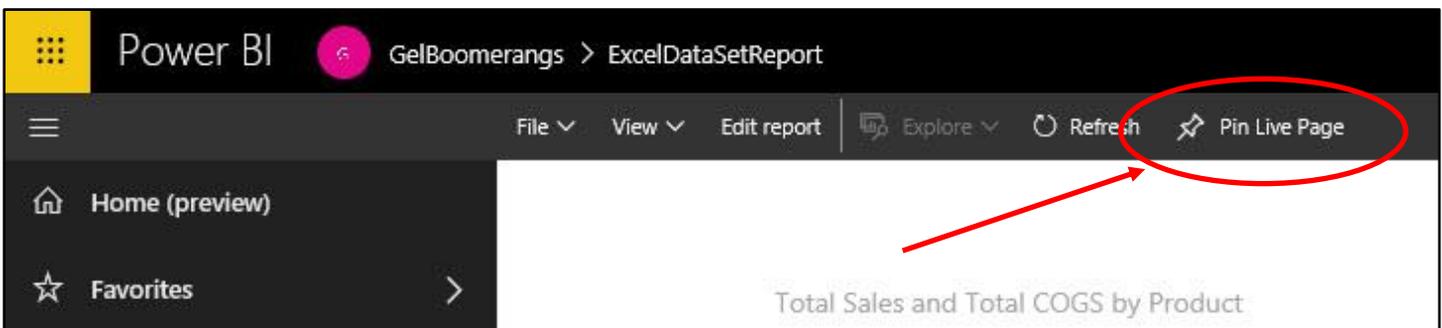
13) Create Power BI Report based on Excel Data Set at the web site powerbi.com :

1. At powerbi.com (Power BI Online), we can use the same tools we had in Power BI Desktop to create Reports.
2. In Data Set View, click the “Create Report” button, as seen here:

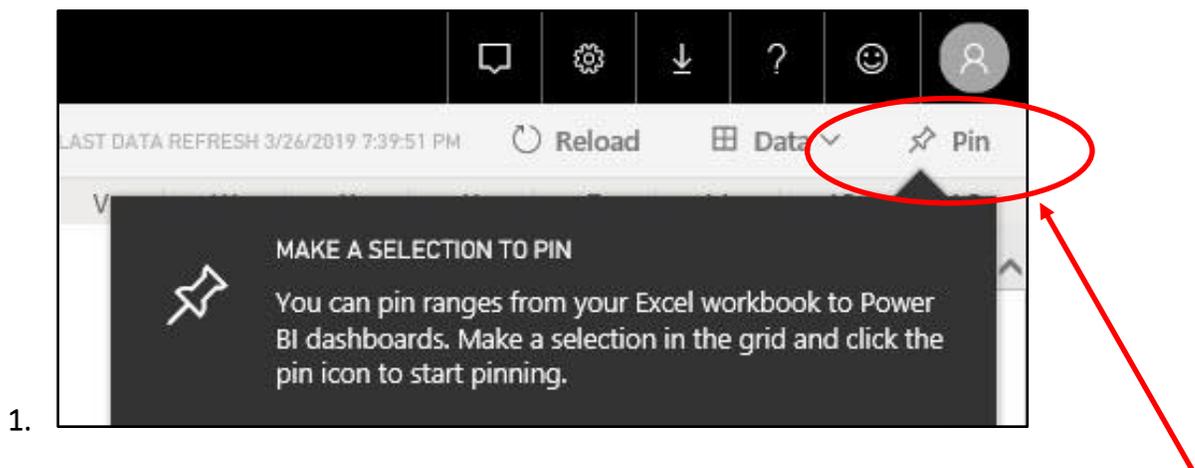


14) Dashboards at Power BI Online (powerbi.com) :

1. We use the word “Dashboard” all the time to refer to collections of visualizations that we create on an Excel Worksheet or on a Power BI Report Tab (Page). But in Power BI Online (powerbi.com) it has a slightly different meaning.
2. At Power BI Online (powerbi.com), a Dashboard is a collection of Excel Worksheets, Power BI Report Tabs (Page), or individual visualizations that we pin to a Dashboard.
3. To pin an item from a Power BI Report to a Dashboard, use the “Pin Live Page” Button:



4. To pin an item from an Excel Workbook to a Dashboard, use the “Pin” Button:



15) MSPTDA is next class! :

1. After you complete the E-DAB Class (Basic Excel Data Analysis and Power BI), you can move on to the MSPTDA Class (Advanced Excel Data Analysis and Power BI).
2. Here is the class link:

https://www.youtube.com/playlist?list=PLrRPvpgDmw0ks5W7U5NmDCU2ydSnNZA_1

3. Here is a screen shot of the 19 videos that hav been posted so far for the MSPTDA Class:

The screenshot shows a YouTube playlist page for 'Microsoft Power Tools for Data Analysis: Dashboards & Reports. Class Introduction Video. MSPTDA #01.' The page features a search bar, a list of 9 videos, and a sidebar with a video player and playlist information.

Microsoft Power Tools for Data Analysis
Class Introduction Video

- Power Query
- Power Pivot
- DAX Formulas
- Power BI Desktop
- Excel

Advanced Data Analysis.
Microsoft Power Tools for Data Analysis (MSPTDA): Power Query, Power Pivot, DAX, Power BI. MSPTDA Playlist of Videos.

22 videos · 45,989 views · Last updated on Feb 24, 2019

Playlist of Videos for this Free YouTube Class:
BI 348 – Microsoft Power Tools for Data Analysis:

- Power Query
- Power Pivot
- DAX
- Power BI Desktop
- Excel

For Creating:
• Data Models, Reports, Dashboards and Analytics Taught by Mike excelsfun Girvin, Excel MVP 2013-2018

- A class about connecting to multiple source of data, transforming the data into a refreshable & dynamic data model, and building reports and dashboards to provide insightful and actionable information.

MSPTDA Playlist
MSPTDA Playlist of Videos
Microsoft Power Tools for Data Analysis Playlist

1 Microsoft Power Tools for Data Analysis - Class Introduction Video. MSPTDA #01. ExcelsFun 12:13

2 MSPTDA #02: Data Analysis Business Intelligence Terms: Microsoft Power Tools for Data Analysis Class ExcelsFun 31:26

3 MSPTDA 03: Power Query Introduction: Importing & Transformation Data in Excel & Power BI Desktop ExcelsFun 57:13

4 MSPTDA 04: Power Query: Import Multiple Excel Files & Combine (Append) into Proper Data Set ExcelsFun 32:04

5 MSPTDA 05: Power Query: Excel.CurrentWorkbook Function to Append All Excel Tables in Excel Workbook ExcelsFun 27:44

6 MSPTDA 06: Power Query: Merge, Append, & UnPivot – 3 Important Transformations ExcelsFun 23:39

7 MSPTDA 07: Power Query: 6 Types of Joins, 6 Types of Merges: 9 Examples ExcelsFun 37:39

8 MSPTDA 08: Power Query Group By feature & Table.Group Function (5 Examples) ExcelsFun 30:43

9 MSPTDA 08.5: Power Query Group By Unique List or Consecutive Occurrences ExcelsFun 8:34

Continues on next page:

10		MSPTDA 09 Power Query Complete M Code Introduction: Values, let, Lookup, Functions, Parameters, More ExcelsFun
11		Formula.Firewall Error in Power Query & Power BI: Rebuild This Data Combination Solved (MSPTDA 9.5) ExcelsFun
12		MSPTDA 10: Power BI M Code for Moving Annual Total (MAT): Custom Function Power Query Custom Column ExcelsFun
13		MSPTDA 11: Power Query to Import from SQL Server Database in Excel or Power BI Desktop ExcelsFun
14		MSPTDA 11.5 Which Power Query Steps Are Used in SQL Query Folding? "View Native Query" feature! ExcelsFun
15		MSPTDA 12: Using Locale in Power Query Power BI: Import & Append Text Files from Different Countries ExcelsFun
16		MSPTDA 13: Power Pivot Introduction #1: Relationships rather than VLOOKUP for PivotTable Report ExcelsFun
17		MSPTDA 14: Power Pivot Into #2: Amazing Columnar Database Importing Millions of Rows Data into Excel ExcelsFun
18		MSPTDA 15: Comprehensive Introduction to Excel Power Pivot, DAX Formulas and DAX Functions ExcelsFun
19		MSPTDA 16: Power BI Desktop Comprehensive Introduction: Power Query, DAX, Dashboards, Publishing ExcelsFun
20		MSPTDA 17: Power BI Online: Dashboards, Reports, Excel Workbooks, Data Sets. ExcelsFun
21		MSPTDA 18: DAX Iterators, Table Functions, Grain, Cardinality, Materializing Tables Excel & Power BI ExcelsFun
22		MSPTDA 19: CALCULATE DAX Function & Filter Context & ALLSELECTED & KEEPFILTERS (50 Examples) ExcelsFun