



# Power Platform App in a Day

Supplemental Module 1: Power BI

Hands-on Lab Step-by-Step

August 2020

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# Power BI

## Lab Prerequisites

This is an optional addition to the App in a Day series, covering Power Apps, CDS, Power Automate and Power BI. The assumption is that you have successfully completed the first four modules, or at least the initial part of setting up an environment as described in the overview – “**00-AppInADay Lab Overview.pdf**”.

If you have not completed the previous modules, you can use the completed version of the lab package in the “\Completed\Module4\Completed Solution” folder. Follow the instructions in the document “Complete Solution” before proceeding with this module, which will provision the app and the CDS entity into your environment.

## About Power BI

[Power BI](#) is a suite of business analytics tools that deliver insights throughout your organization. In this lab, we will be using Power BI to visualize data from the device procurement process. Power BI can connect to hundreds of data sources and prepare the data for use. In this lab, you will be using the CDS and the Excel connectors.

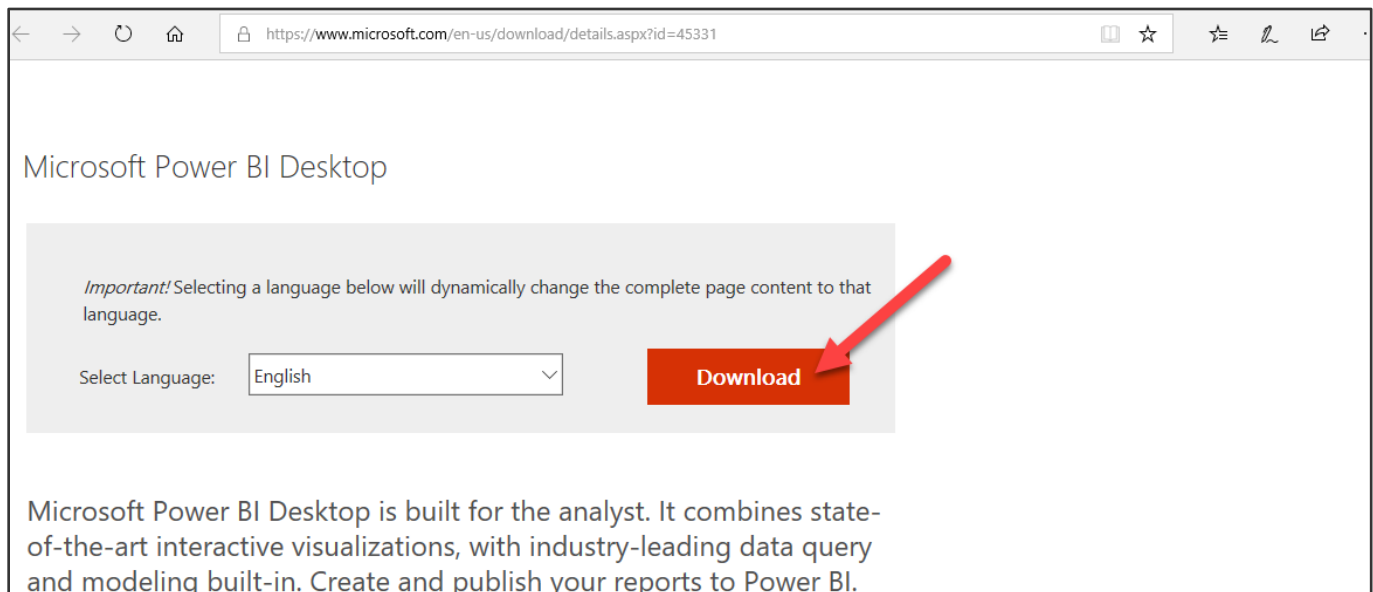
# Exercise 1: Install Power BI Desktop

In this exercise you will install the Power BI Desktop application. **If you already have the application installed, you may skip to Exercise 2.**

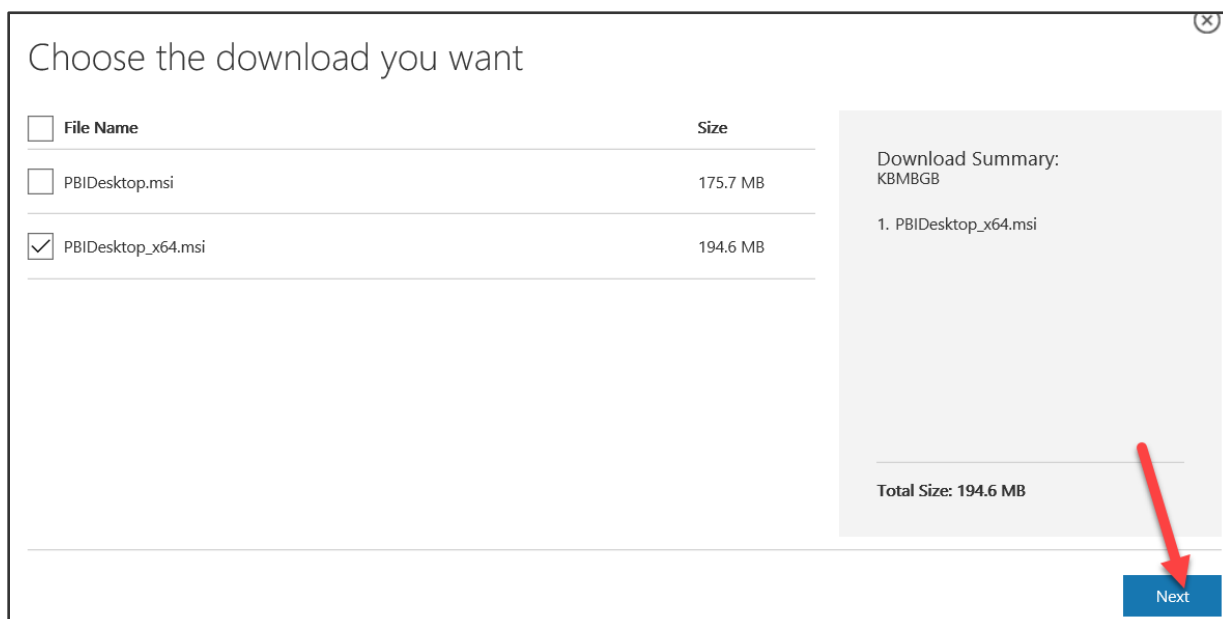
## Task 1: Download and install Power BI Desktop

In this task, you will download and install Power BI Desktop.

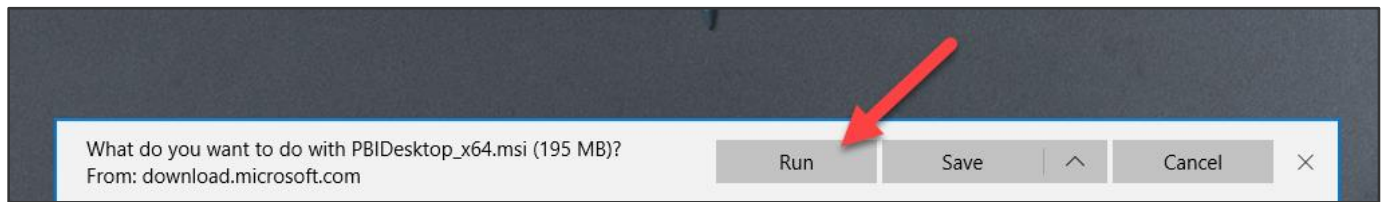
1. Navigate to [Power BI Installer](https://www.microsoft.com/en-us/download/details.aspx?id=45331) and click Download.



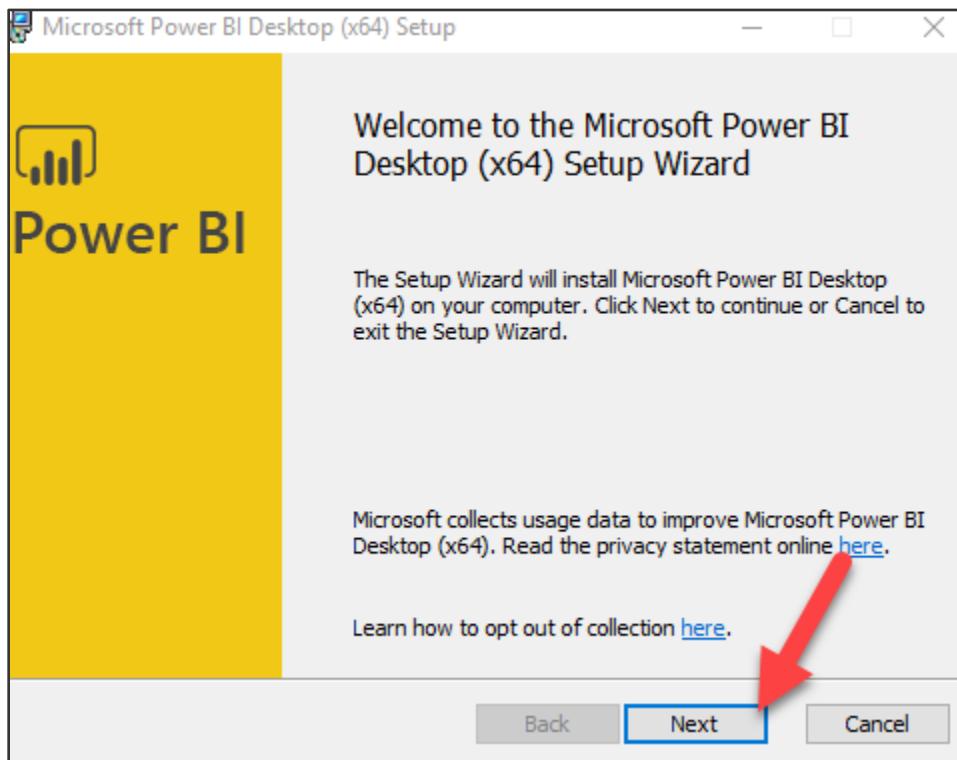
2. Select the appropriate version for your computer and click Next.



3. Click Run.



4. Click Next.



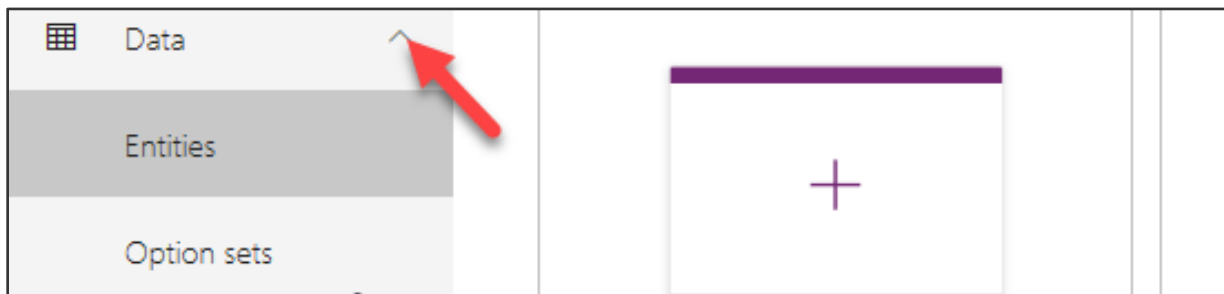
5. Follow the installation wizard and complete the installation.

# Exercise 2: Import historical data

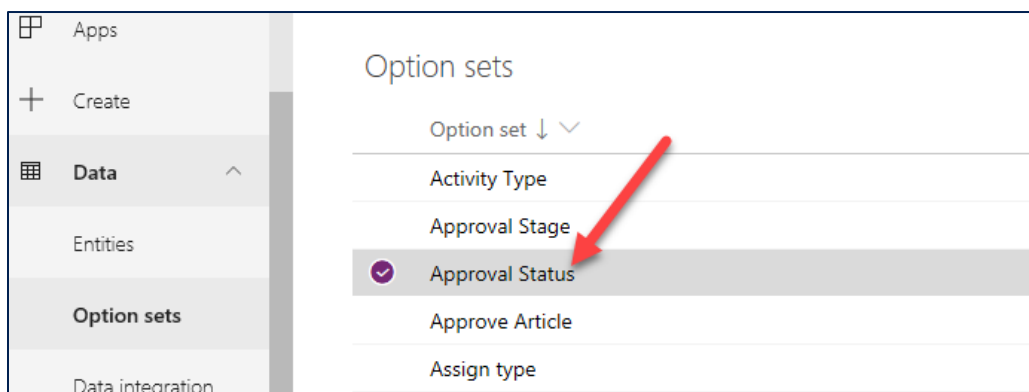
## Task 1: Import past orders into CDS

Since you probably only input four or five device orders when testing the PowerApp you built in the prior modules we need more test data to report on. To make the Power BI Analytics more interesting we need some additional data. In this task you will be importing some historical orders into the CDS Device Orders entity.

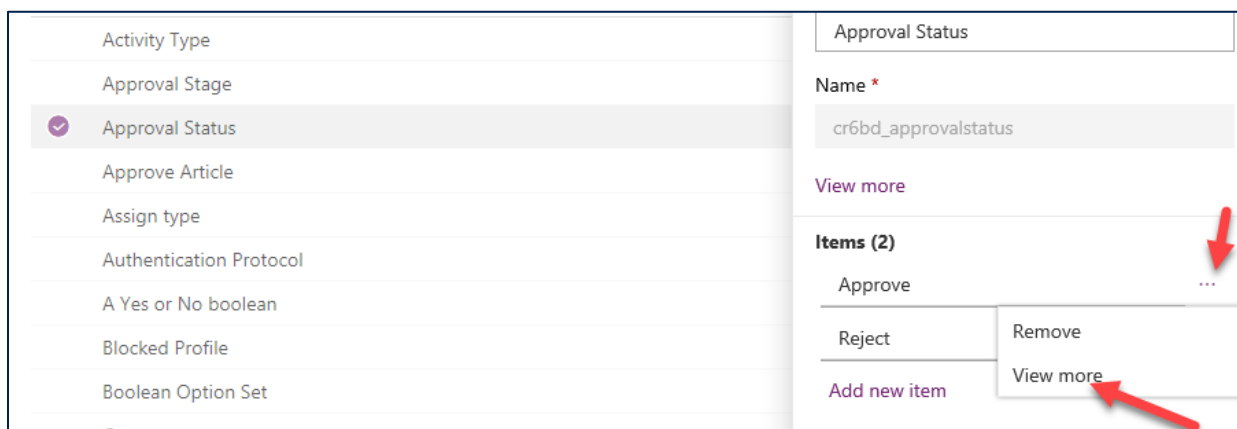
1. From [Make Power Apps](#) log in to your existing Power Apps Environment that has your CDS data that you have used for the prior labs. Select your environment and expand **Data**.



2. Select **Option Sets** and click on the **Approval Status**.



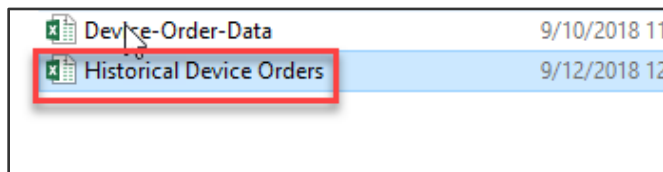
3. Click the ... button of the **Approve** option and select View More.



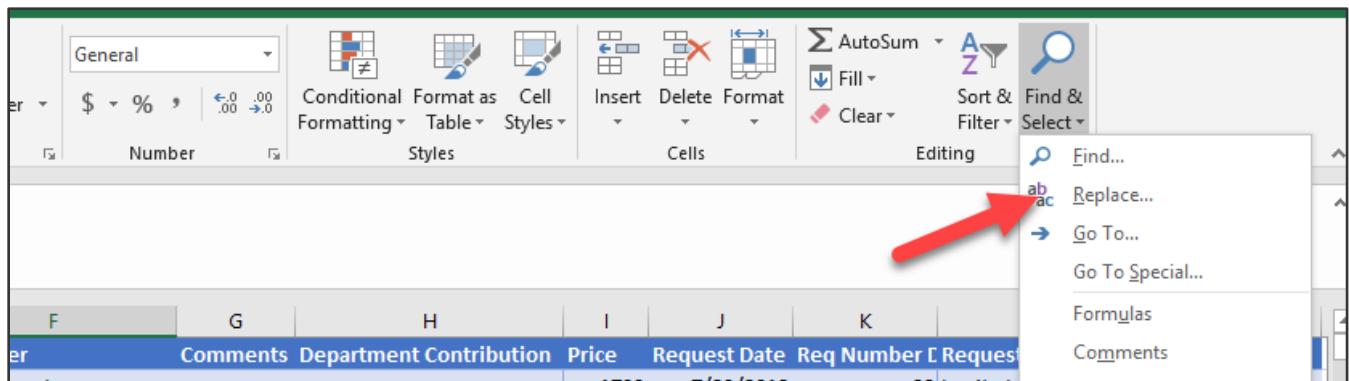
## 4. Copy the Value.

The screenshot shows the 'Approval Status' configuration interface. On the left is a list of activity types, with 'Approval Status' selected. On the right, the configuration details for 'Approval Status' are shown. The 'Name' field contains 'cnc69\_approvalstatus'. Below it, the 'Items (2)' section lists 'Approve'. The 'Value' field is highlighted with a red box and contains the value '453,660,000'. At the bottom, there are 'Save' and 'Cancel' buttons.

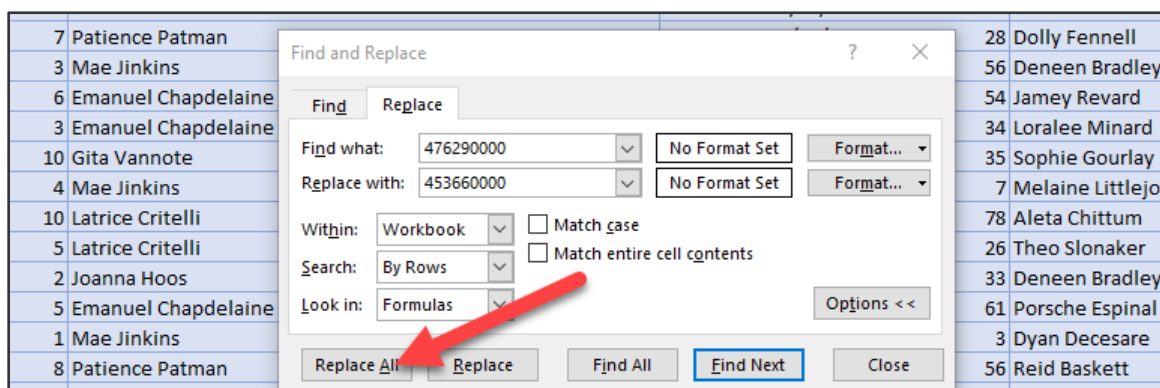
## 5. Go to the resources folder of the module and open the Historical Device Order Excel file



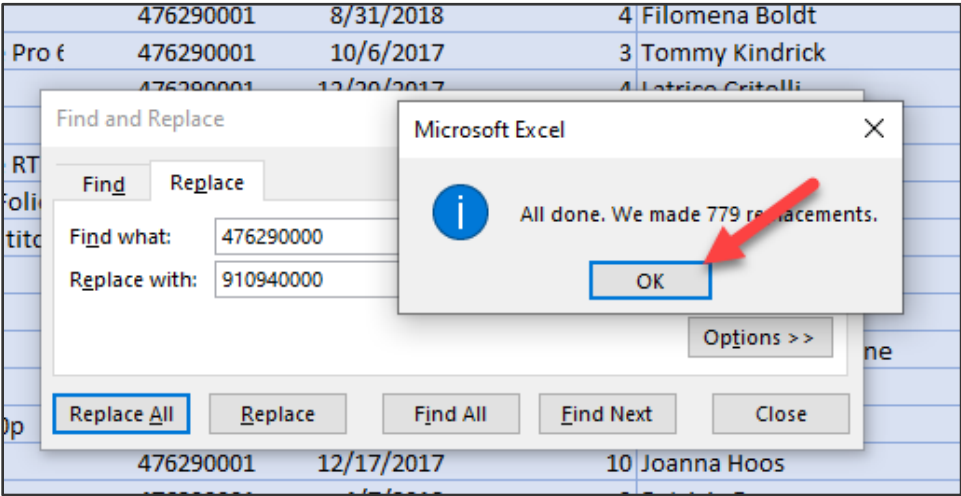
## 6. Click Find and select Replace.



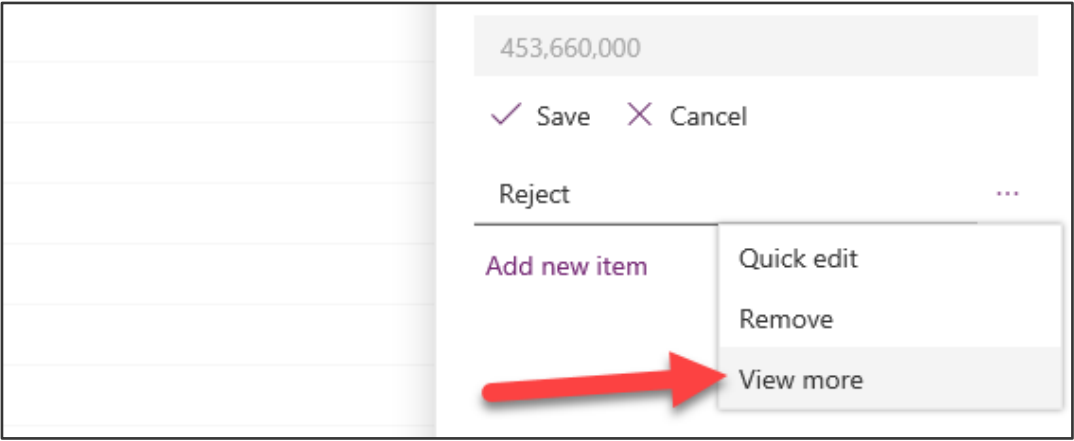
## 7. Enter 476290000 for Find, type the Value you copied (without the commas) in the Replace field, and click Replace All.



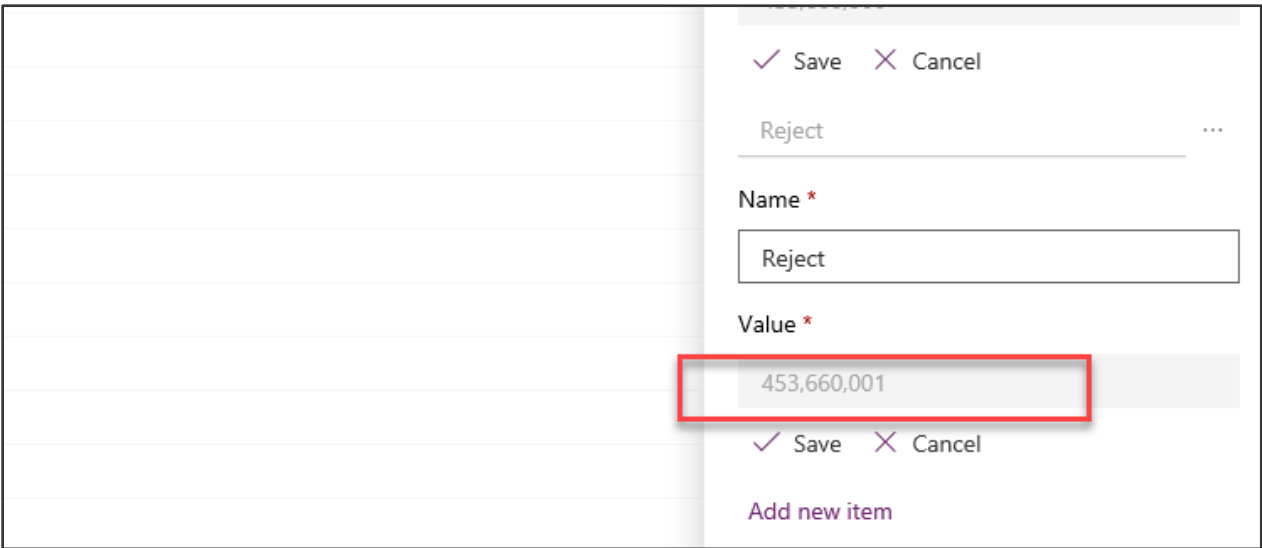
8. Click OK.



9. Go back to Power Apps, click on the ellipses button of the Reject option, and select View More.

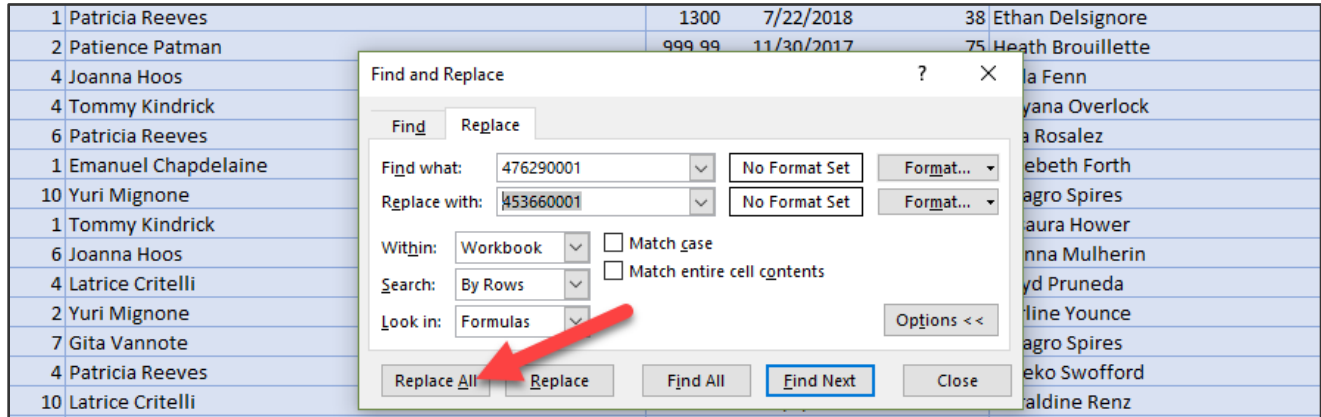


10. Copy the Value again.

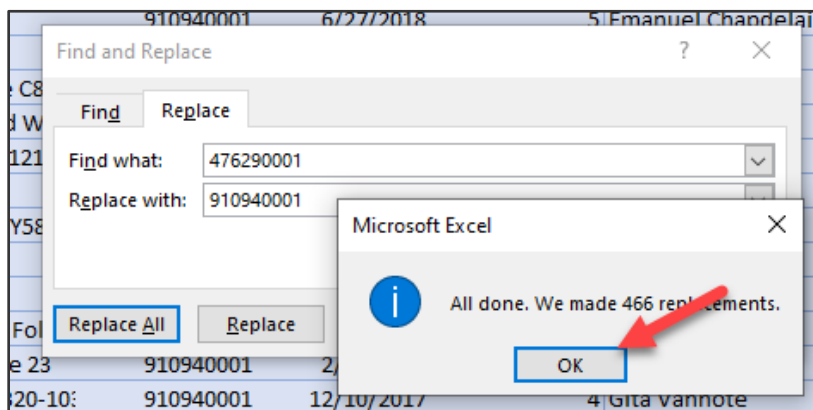




11. Go back to the Excel file, type 476290001 on the find field, the value you copied (without the commas) in the replace field, and click Replace All.



12. Click Ok.



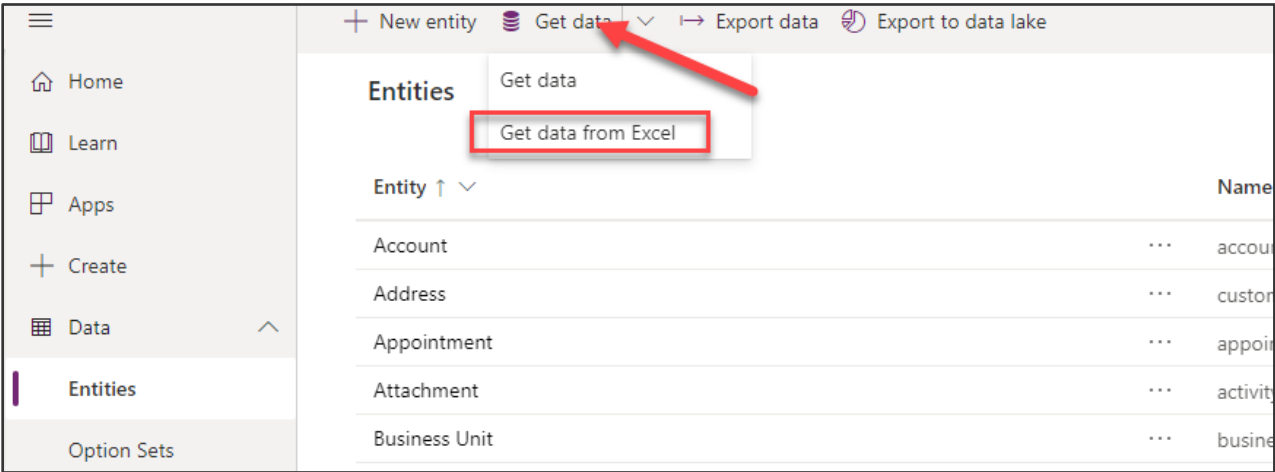
13. Close the Find and Replace dialog.  
14. Save the Excel file and close it.

*Note: The reason we are doing this is due to each environment having a unique publisher prefix, when you created your solution the values of the option set are prefixed based on that value. Currently the import process we are going to use requires the numeric value and not the label value so it must be adjusted.*

15. Go back to the Power Apps and close the Option Set edit window.



16. There are many options available to get data into CDS. We are going to import from an Excel file. Select **Entities** click **Get Data** and select **Get Data from Excel**.



17. Scroll down the list of entities and choose **Device Order**

Customer Relationship	System
Data Map	Standard
✓ Device Order	Custom
Device Procurement Process	Custom

18. Scroll back up and in the upper right corner click **Next**



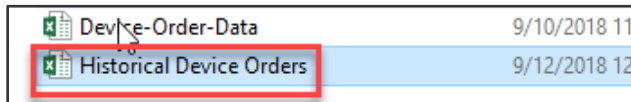
19. Click Upload to open the file browser

Import data

Choose the file you want imported for each entity, and we'll map the fields that match. [Learn more](#)

Name	File	Mapping status
Device Order	<div>File not uploaded</div> <div>↑ Upload</div>	Not mapped

20. Select the Historical Device Orders Excel file.



21. After the file upload is complete it will show mapping errors, Click **Map fields**

Import data

Choose the file you want imported for each entity, and we'll map the fields that match. [Learn more](#)

Name	File	Mapping status
Device Order	Historical Device Orde...	Upload            Mapping errors exist            Map fields

22. Map the following fields

Device Order fields	Source values
Approval Status Value	Approval Status
Approved Date	Approved Date
Approver	Approver
Comments	Comments
Device Name	Device Name
Price	Price
Process ID	Select None to un map
Request Date	Request Date
Requested By	Requested By

23. Change the Show: dropdown to Mapped fields to show only the fields you have mapped. Confirm your list matches the list show in the image.

Field mappings for Device Order

Filter by entity field name: No file Show: Mapped fields Entity field filter has been applied

Device Order fields	Source values
Approval Status Value	Approval Status
Approved Date	Approved Date
Approver	Approver
Comments	Comments
Device Name *	Device Name
Price	Price
Request Date	Request Date
Requested By	Requested By

24. Confirm that Process Id is NOT mapped to Approved Date, if it is then un map it by selecting None.

Import Sequence Number	Not set
Owning Business Unit	Not set
Price (Base)	Not set
Process Id	Not set
Send Survey	Not set
Stage Id	Not set

25. Click **Save changes** to proceed. You may still have an Error and a Warning that is ok

Cancel **Save changes**

Field mappings for Device Order

Filter by entity field name:  Show:  **Entity field filter has been applied**

Device Order fields	Source values
Approved Date	Approved Date

26. Click Import to begin the import of the historical data

**Import**

Import data

Choose the file you want imported for each entity, and we'll map the fields that match. [Learn more](#)

Name	File	Mapping status
Device Order	<input type="text" value="Historical Device Orde..."/>	<input type="button" value="Upload"/> <input type="button" value="Mapping warnings exist"/> <input type="button" value="Map fields"/>

27. This should take a couple of minutes to complete – while processing you should see the following

Import data

  
Importing your data...

28. Once the import has completed you should see the following



29. If for some reason the import wasn't successful, download the log file and review. Most common cause is an improper mapping of a field type. If that happens just start this task again as it doesn't retain your mappings.

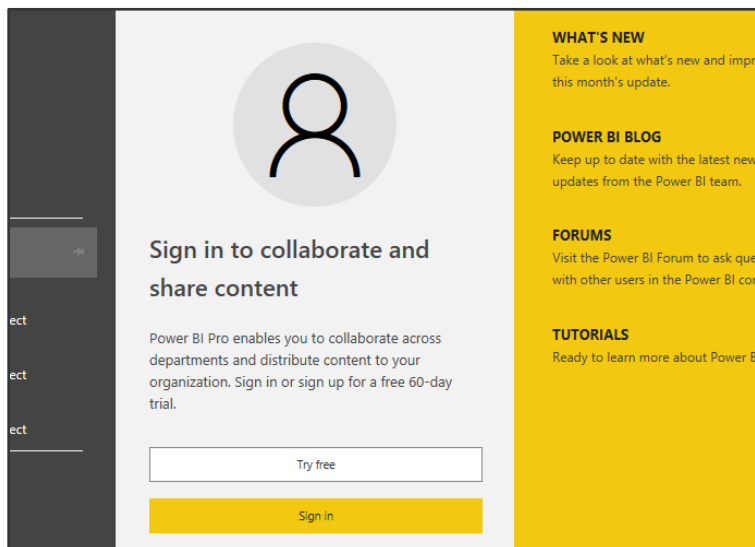
# Exercise 3: Connect and reference data

In this exercise, you will connect to the CDS using a connector. You will then be referencing the data from the device procurement process that you will use to build the visualizations. This includes selecting only the data that is useful to help have a easy to use data set to work with.

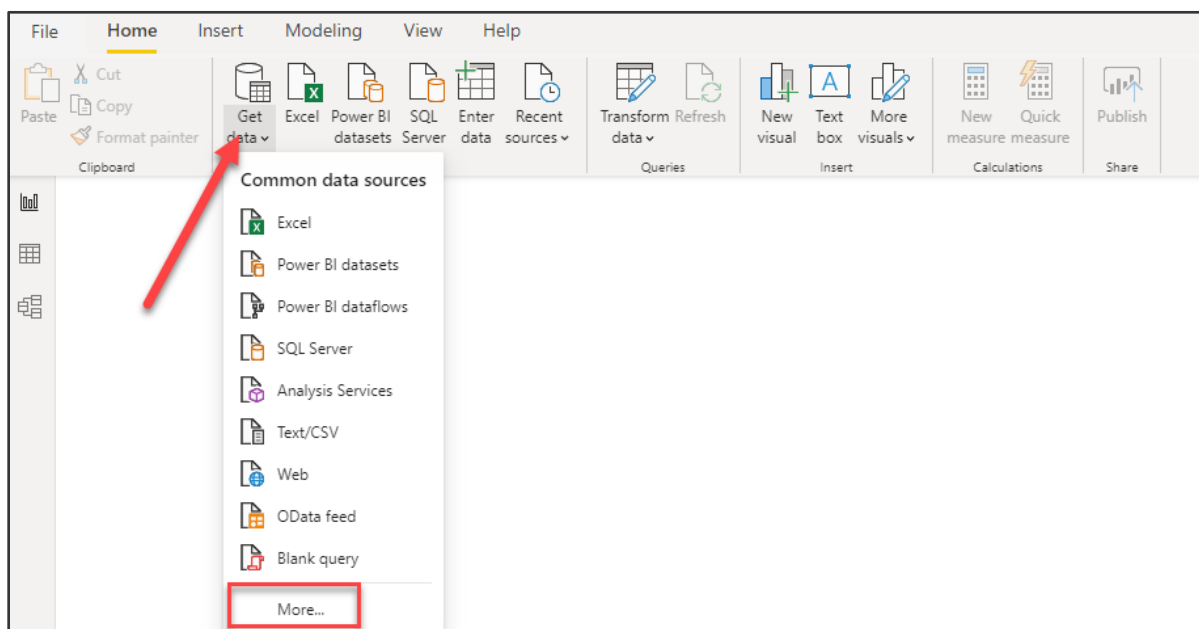
## Task 1: Connect Power BI to the CDS Data

In this task, you will get data from your CDS.

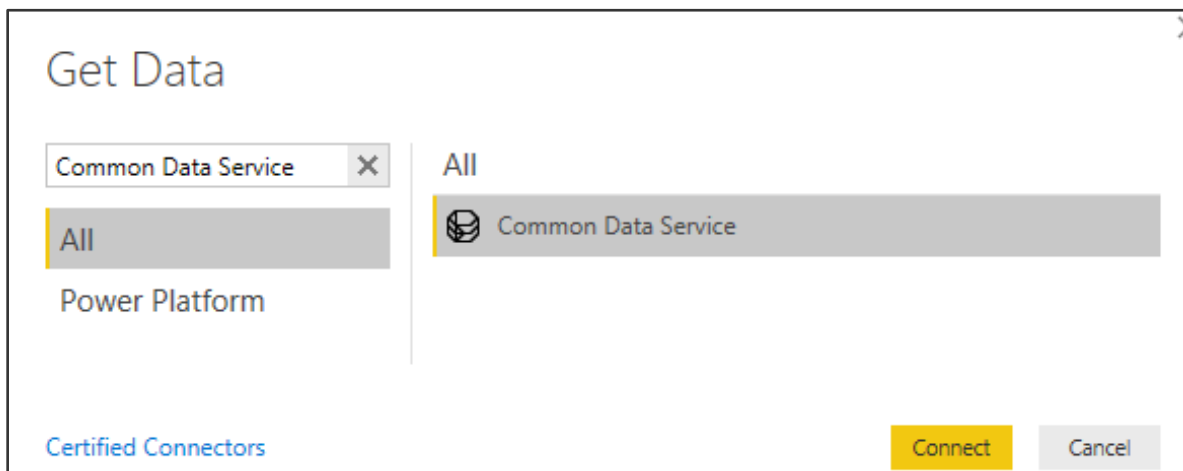
1. Start Power BI Desktop application and click Sign in.



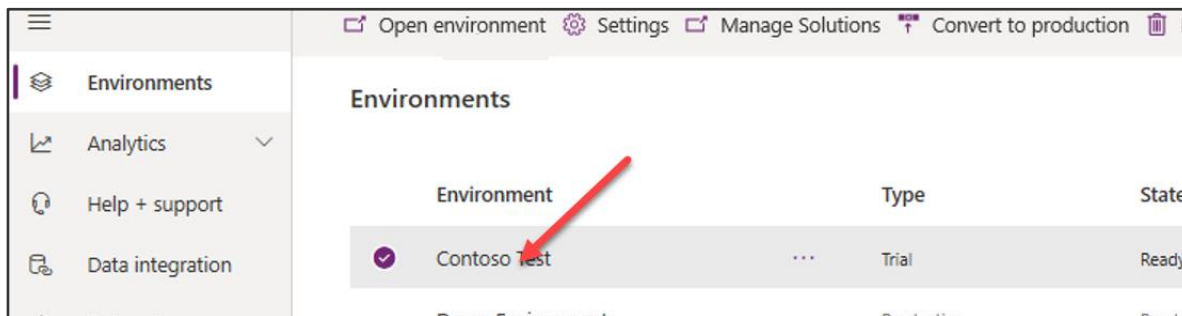
2. Provide your credentials and sign in.
3. Click Get Data and select More...



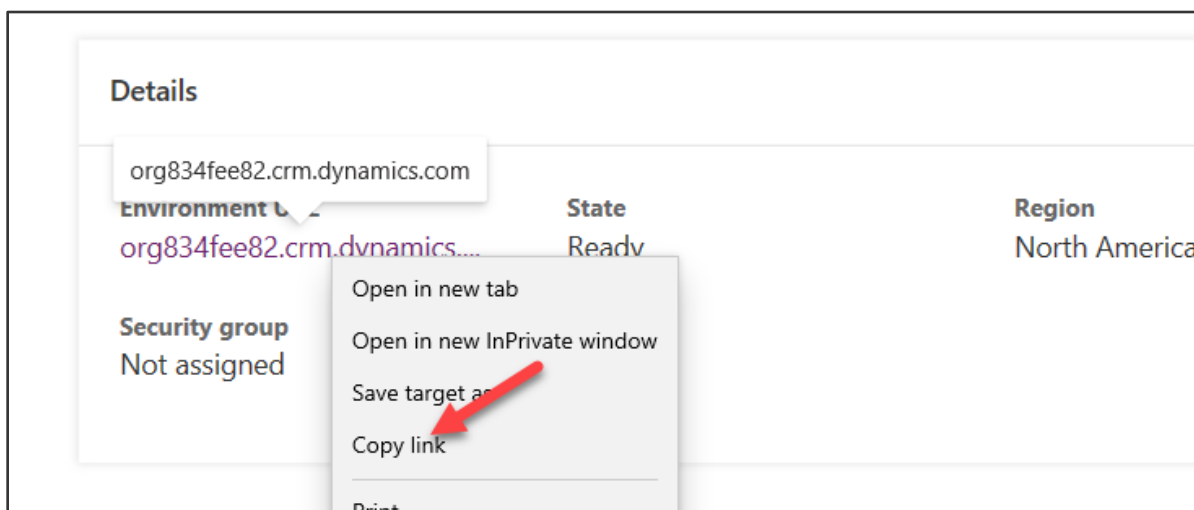
4. Search for **Common Data Service**, select it, and click **Connect**.



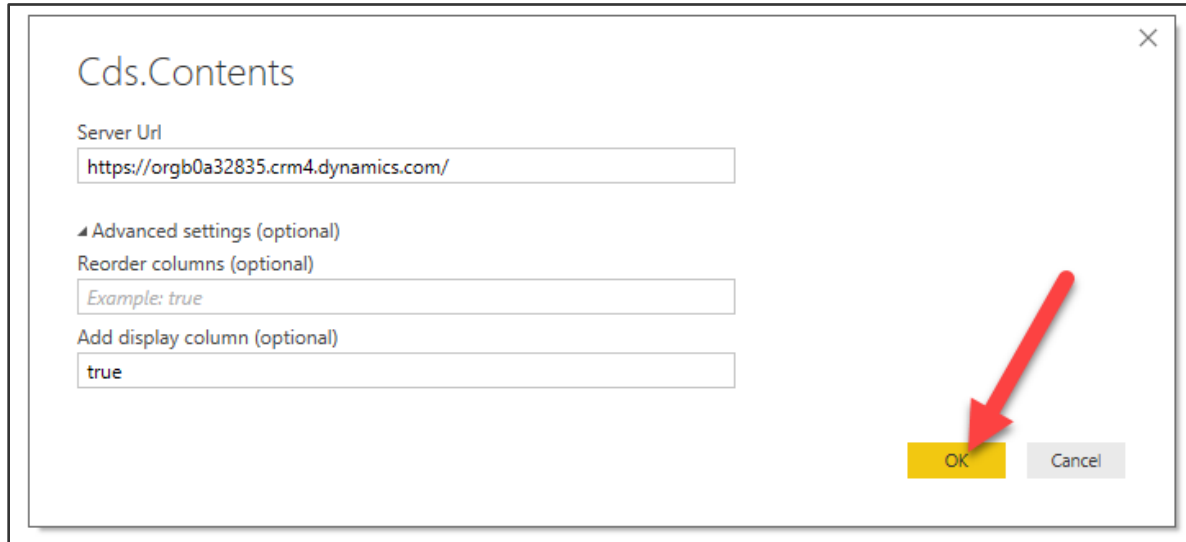
5. Navigate to [Admin Power Platform](#) and select Environments.  
6. Click to open your environment.



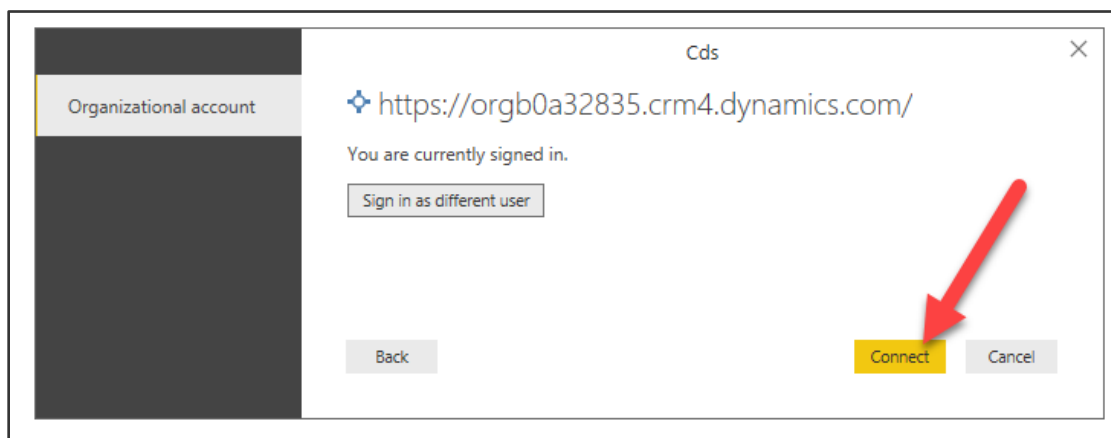
7. Right click on the **URL** and copy the link



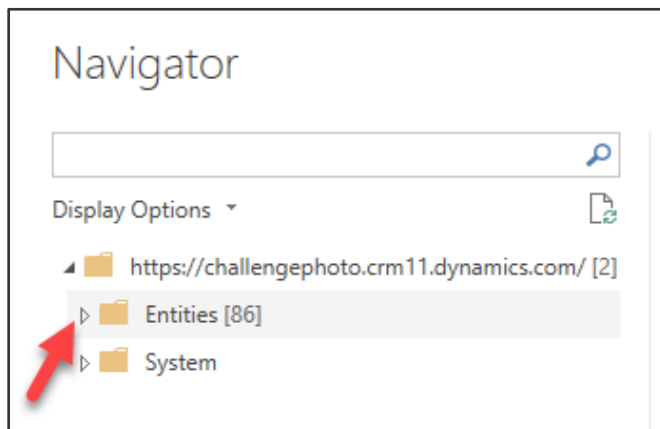
8. Go back to Power BI Desktop, paste the **URL** you copied into the **Server URL** field, type **true** in the **Add Display Column** field, and click **OK**.



9. If you are prompted to sign in, click **Sign in** and provide your credentials.  
10. Click **Connect**.

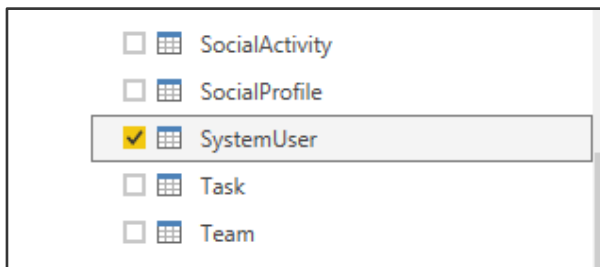
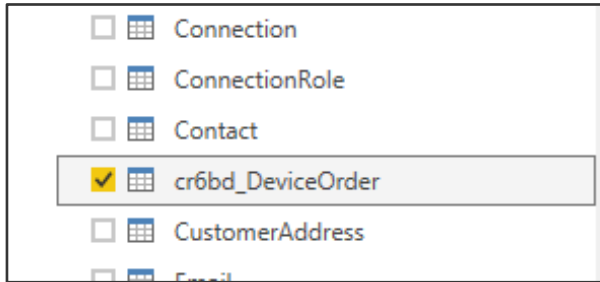


11. Expand **Entities**.

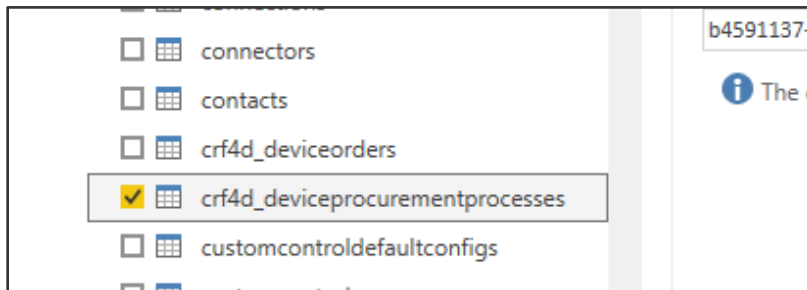




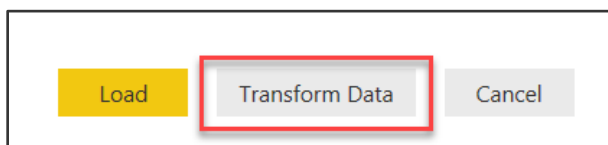
12. Select **\_DeviceOrder** and **SystemUser** Note: it will be in the format of <prefix>\_DeviceOrder where the prefix will be different in each environment.



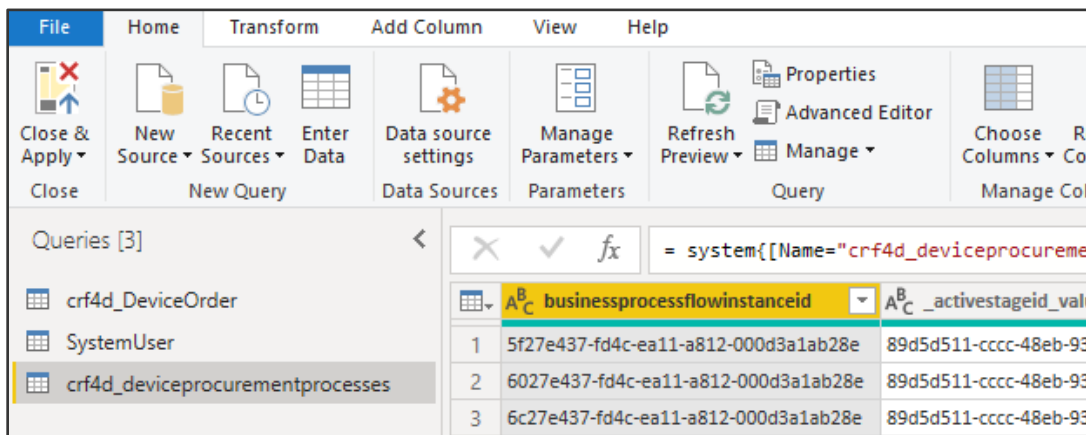
13. Expand **System** and select **new\_deviceprocurementprocesses**.



14. Click **Transform Data**

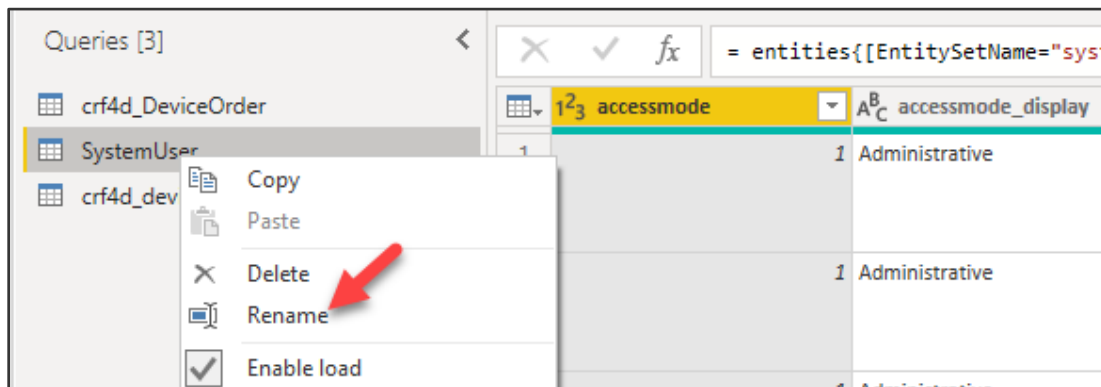


15. Your data will now be available in the Power Query Editor.

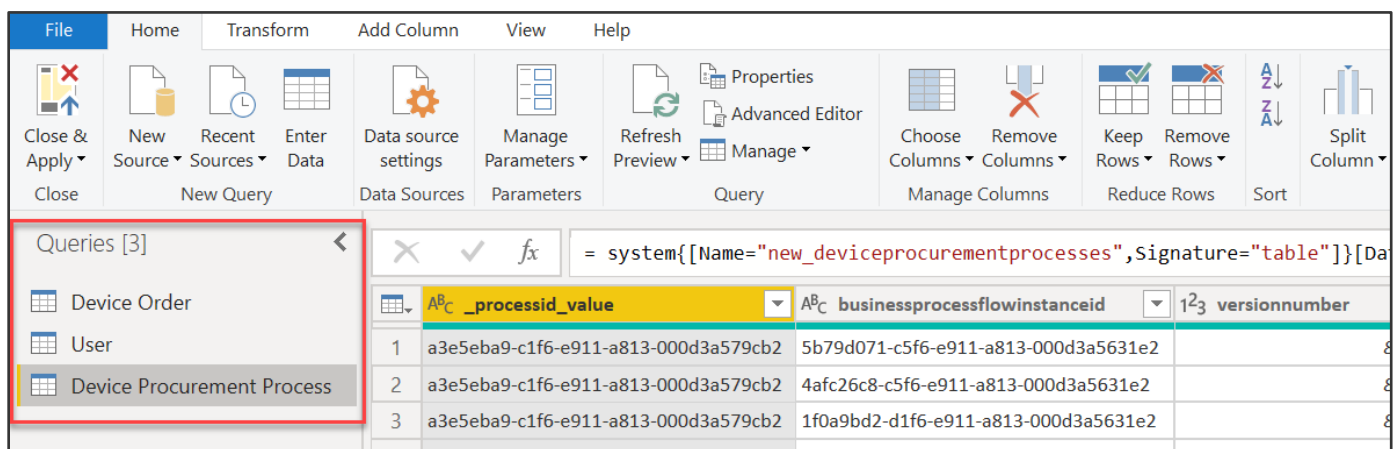


## Task 2: Clean up and Transform

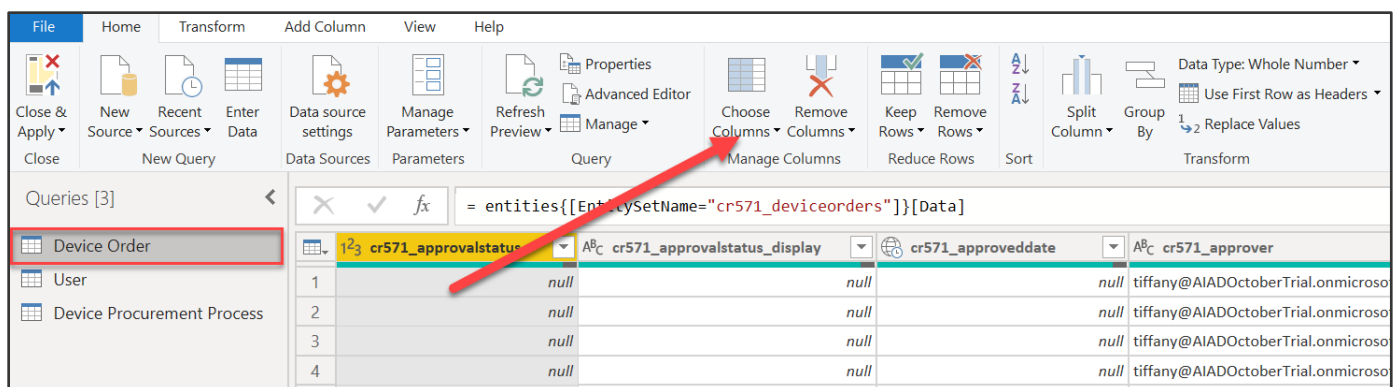
1. Right click on the **System User** table and click **Rename**.



2. Rename the table from **SystemUser** to **User**.
3. Rename the **DeviceOrder** table to **Device Order** and the **DeviceProcurementProcesses** to **Device Procurement Processes**. Your table names will now look like the image below.



4. Next, we are going to remove columns from our query on the Device Order entity to make it fewer columns we need to work with.
5. Select the **Device Order** table and click **Choose Columns**. Alternatively, you can also select the column header in the grid while holding the Ctrl key and then select the columns, then right-click and select Remove Other columns.



6. Un check the **Select All Columns** checkbox.
7. Select the columns listed below and click **OK**. Note: the action names will be in the format of <prefix>\_<name>.

The following are the names

- Approvalstatus
- Approvalstatus\_display
- Approveddate
- Approver
- Departmentcontribution
- Devicename
- Deviceorderid
- Price
- Requestdate
- Requestedby

### Choose Columns

Choose the columns to keep

☐ (Select All Columns)
 ☒ cr571\_approvalstatus
 ☒ cr571\_approvalstatus\_display
 ☒ cr571\_approveddate
 ☒ cr571\_approver
 ☐ cr571\_capitalapproved
 ☐ cr571\_comments
 ☒ cr571\_departmentcontribution
 ☐ cr571\_departmentcontribution\_base
 ☐ cr571\_deviceconfigured
 ☐ cr571\_devicedelivered
 ☒ cr571\_devicename
 ☒ cr571\_deviceorderid
 ☐ cr571\_devicereceived
 ☐ cr571\_estimatedshipdate
 ☒ cr571\_price
 ☐ cr571\_price\_base
 ☒ cr571\_requestdate
 ☒ cr571\_requestedby
 ☐ cr571\_sendsurvey

8. Right click on the **Approvalstatus\_display** column header and click **Rename**.

123 crf4d_approvalstatus	A <sup>B</sup> crf4d_approvalstatus_display	crf4d_approveddate	A <sup>B</sup> crf4d_approver	1.2 crf4d_department
	Copy		admin@M365x787698.onmicrosoft.c...	
	Remove		admin@M365x787698.onmicrosoft.c...	
	Remove Other Columns		admin@M365x787698.onmicrosoft.c...	
	Duplicate Column		admin@M365x787698.onmicrosoft.c...	
	Add Column From Examples...		admin@M365x787698.onmicrosoft.c...	
	Remove Duplicates		admin@M365x787698.onmicrosoft.c...	
	Remove Errors		Tommy Kindrick	
	Unpivot Only Selected Columns		Tommy Kindrick	
	Rename...		Filomena Boldt	
	Move		Mae Jenkins	
729660000	Approve			
729660001	Reject			
729660001	Reject			
729660001	Reject			
729660001	Reject			
729660001	Reject			

9. Rename the column **Approval Status**.

	123 cr571_approvalstatus	Approval Status	cr571_approveddate
1	null		null
2	null		null
3	null		null
4	null		null
5	322730000	Approve	10/25/2019 3:00:29 AM +00:00
6	322730001	Reject	10/25/2019 3:00:33 AM +00:00

## 10. Rename the rest of the columns as shown below. You may rename other fields if you have time but not required for the lab.

Current Name	New Name
approvalstatus	Approval Status ID
approveddate	Approved Date
approver	Approver
departmentcontribution	Department Contribution
devicename	Device Name
deviceorderid	Device Order
price	Price
requestdate	Request Date
requestedby	Requested By

11. Select the **User** table and click Choose Columns.

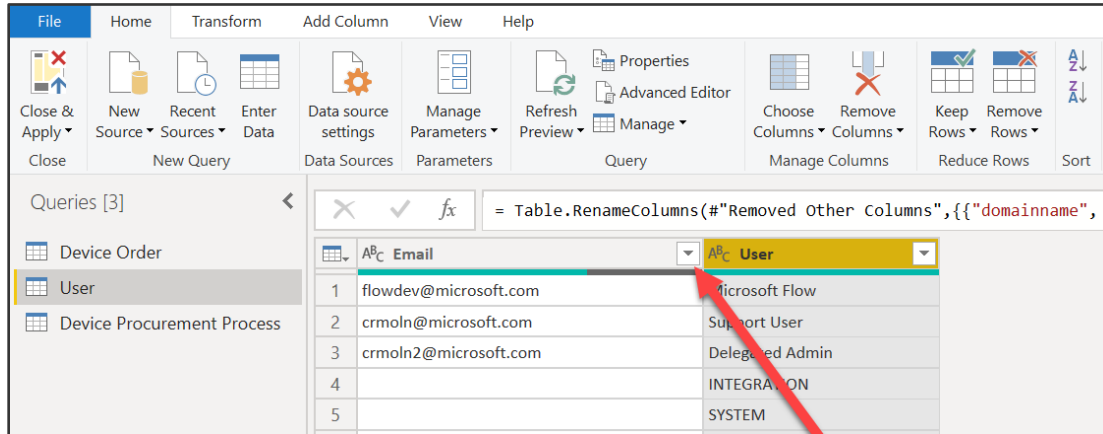
The screenshot shows the Power BI Desktop interface. In the 'Queries' list on the left, the 'User' table is selected and highlighted with a red box. In the 'Home' ribbon, the 'Choose Columns' button is highlighted with a red arrow. The formula bar shows the query: `= entities{[EntityTypeSetName="cr571_deviceorders"]}[Data]`. The data preview shows columns: `cr571_approvalstatus`, `cr571_approvalstatus_display`, and `cr571_approveddate`.

## 12. Uncheck Select All Columns

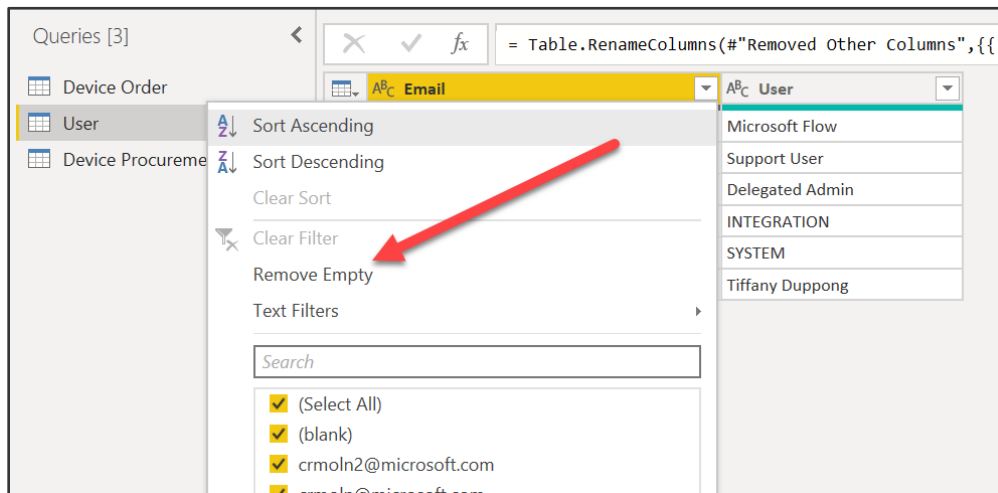
13. Select **domainname**, **fullname** and click **OK**. Tip: Using Search can speed up finding the columns.

The 'Choose Columns' dialog box is shown. It has a search bar at the top. Below it, a list of columns is displayed with checkboxes. The columns are: `displayinserviceviews`, `domainname` (checked), `emailrouteraccessapproval`, `firstname`, `fullname` (checked), and `internalemailaddress`. At the bottom, there are 'OK' and 'Cancel' buttons. A red arrow points to the 'OK' button.

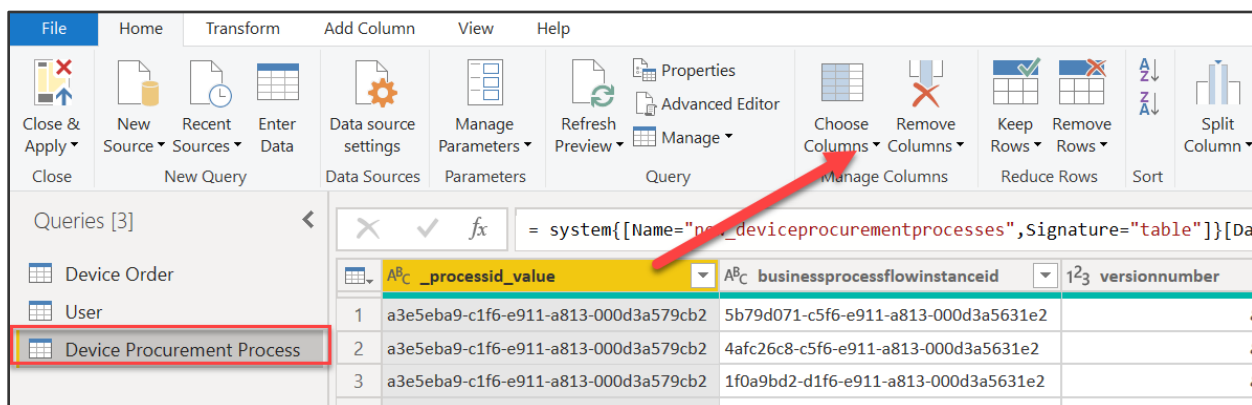
14. Rename the **domainname** column to **Email** and the **fullname** column to **User**.
15. Click Sort on the **Email** column.



16. Click **Remove Empty**.



17. Select the **Device Procurement Process** table and click **Choose Columns**.



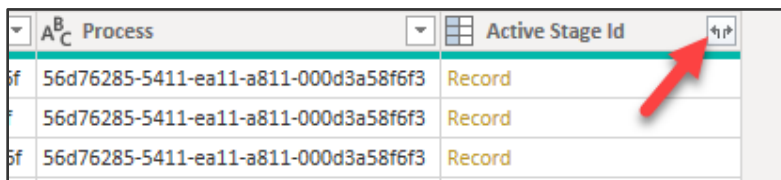
18. Uncheck **Select All Columns**.
19. Select the columns listed below and click OK.
  - bpf\_name
  - \_processid\_value

- completedon
- businessprocessflowinstanceid
- \_bpf\_CRC69\_deviceorderid\_value (Note: the CRC69 might be different in your list)
- Activestageid

20. Rename the fields as shown below. You may rename the other fields.

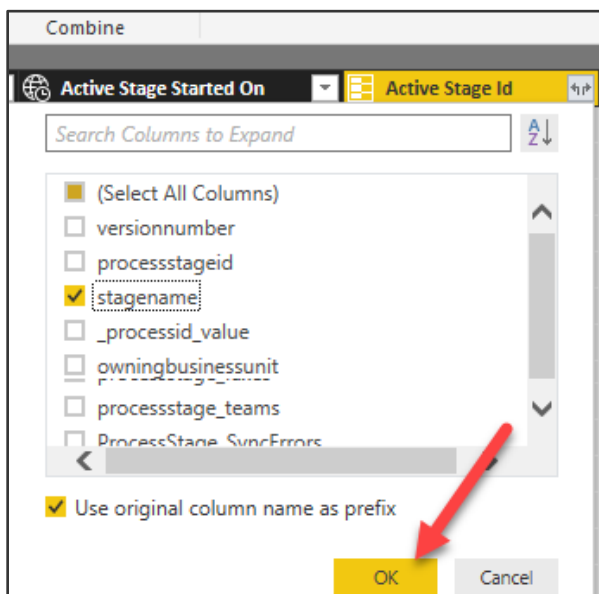
Current Name	New Name
<b>bpf_name</b>	Name
<b>_processid_value</b>	Process
<b>businessprocessflowinstanceid</b>	Device Procurement Process
<b>_bpf_CRC69_deviceorderid_value (Note: the CRC69 might be different in your list)</b>	Device Order
<b>activestageid</b>	Active Stage Id
<b>completedon</b>	Completed On

21. Expand the **Active Stage** column. This will allow us to select one or more values from the related entity.



Process	Active Stage Id
56d76285-5411-ea11-a811-000d3a58f6f3	Record
56d76285-5411-ea11-a811-000d3a58f6f3	Record
56d76285-5411-ea11-a811-000d3a58f6f3	Record

22. Select **stagename** and click OK.



Combine

Active Stage Started On | Active Stage Id

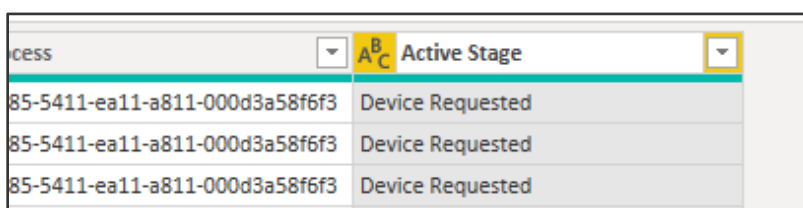
Search Columns to Expand

- (Select All Columns)
- ☐ versionnumber
- ☐ processstageid
- ☒ stagename
- ☐ \_processid\_value
- ☐ owningbusinessunit
- ☐ processstage\_teams
- ☐ ProcessStage\_SyncErrors

☒ Use original column name as prefix

OK Cancel

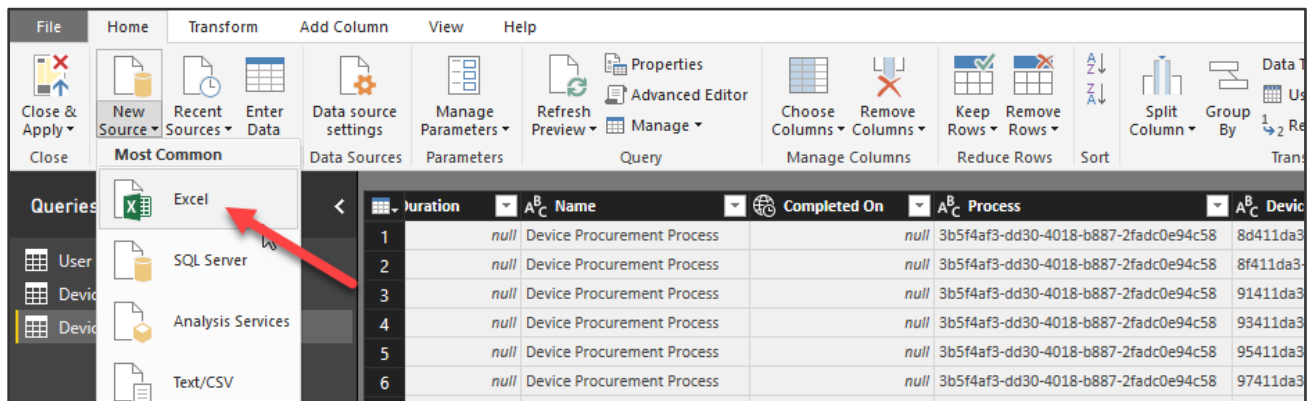
23. Rename the column to **Active Stage**.



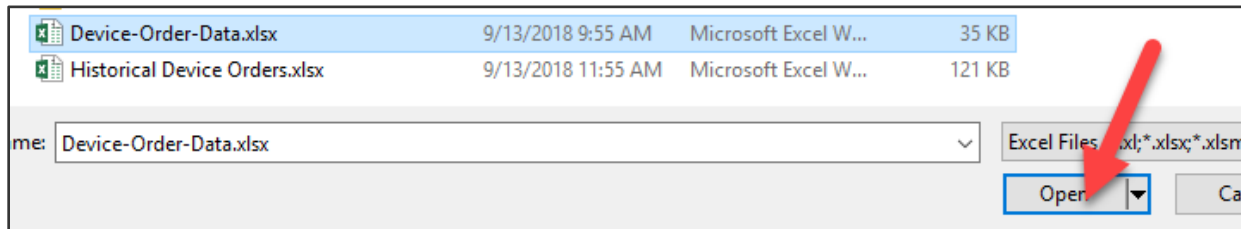
Process	Active Stage
85-5411-ea11-a811-000d3a58f6f3	Device Requested
85-5411-ea11-a811-000d3a58f6f3	Device Requested
85-5411-ea11-a811-000d3a58f6f3	Device Requested

## Task 3: Add Device Manufacturer Data

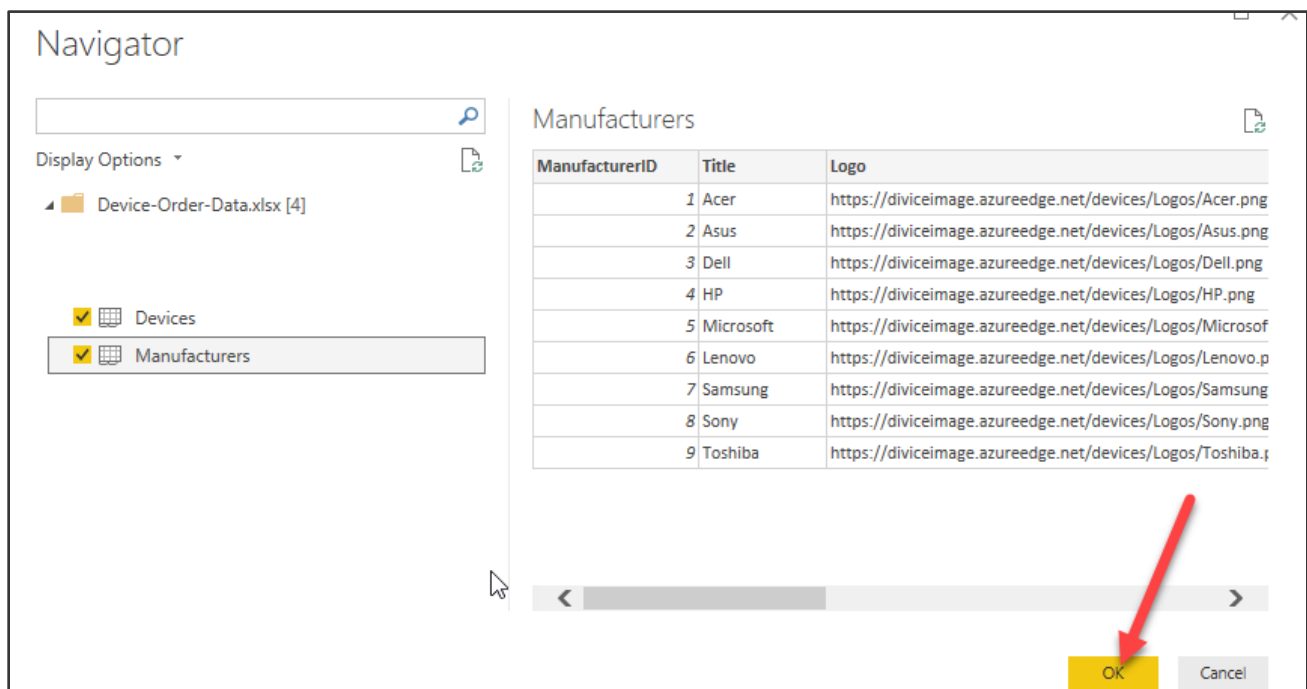
1. Select the Home tab, click **New Source**, and select **Excel**.

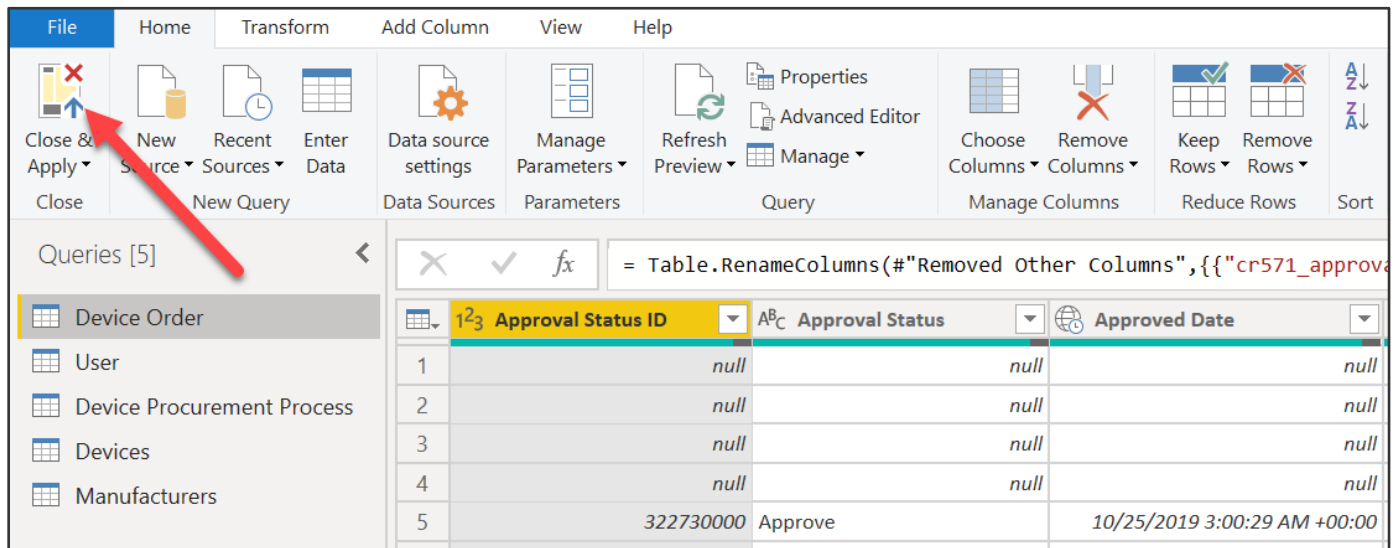


2. Select the Device Manufacturer Data (**Device Order Data.xlsx**) file provided to you and click Open.



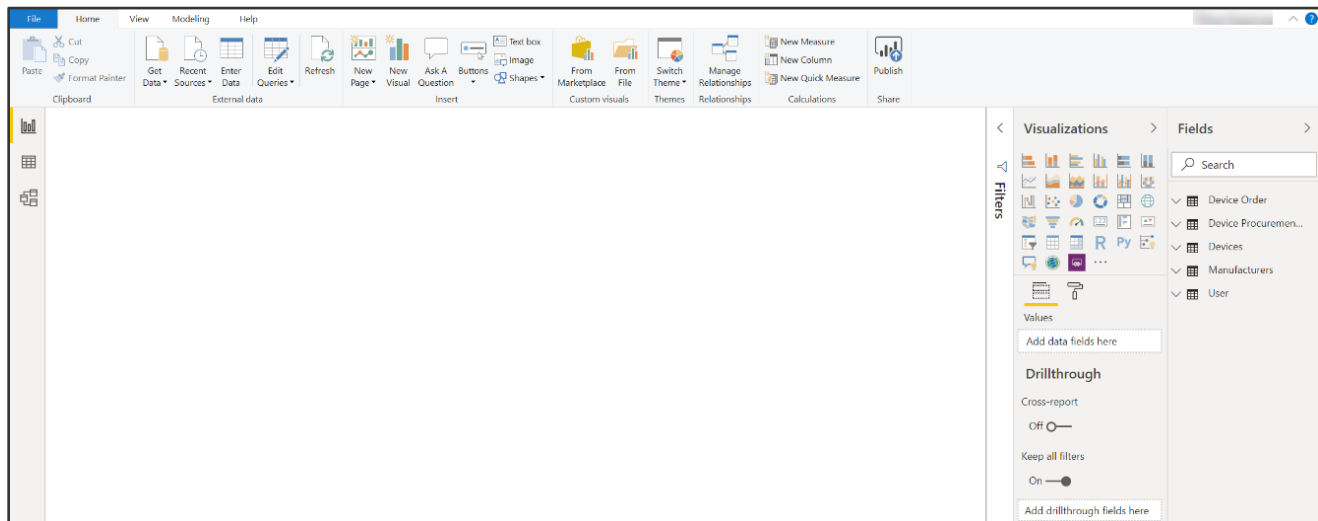
3. Select the **Devices** and **Manufacturers** tables and click OK.



4. Click **Close and Apply**.

Note: Power Query has a lot of powerful transformations that can be done including trimming, replacing values, transpose, change data type, and many more. Each of these transformations are built as an M query that is applied each time you refresh the data. You can see the query that is built by clicking on the Advanced Editor button.

## 5. The Power Query editor will close, and you will be back on the Power BI Desktop.



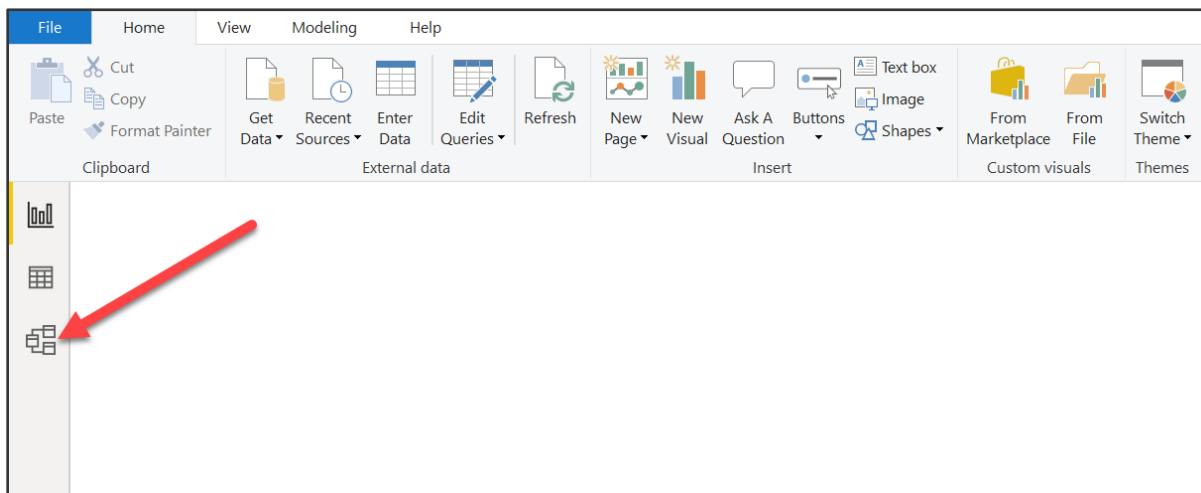


# Exercise 4: Setup Relationships and Calculated Columns

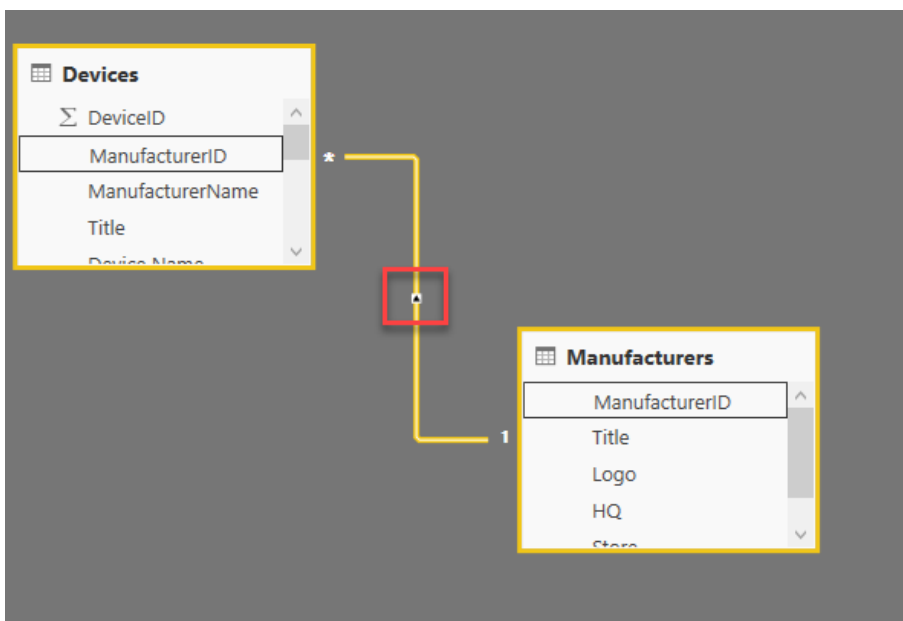
## Task 1: Manage Relationships

In this task, you will establish the relationships between the data. You will notice auto detection identifies a couple of relationships within the data. In this task you will be establishing the remaining relationships.

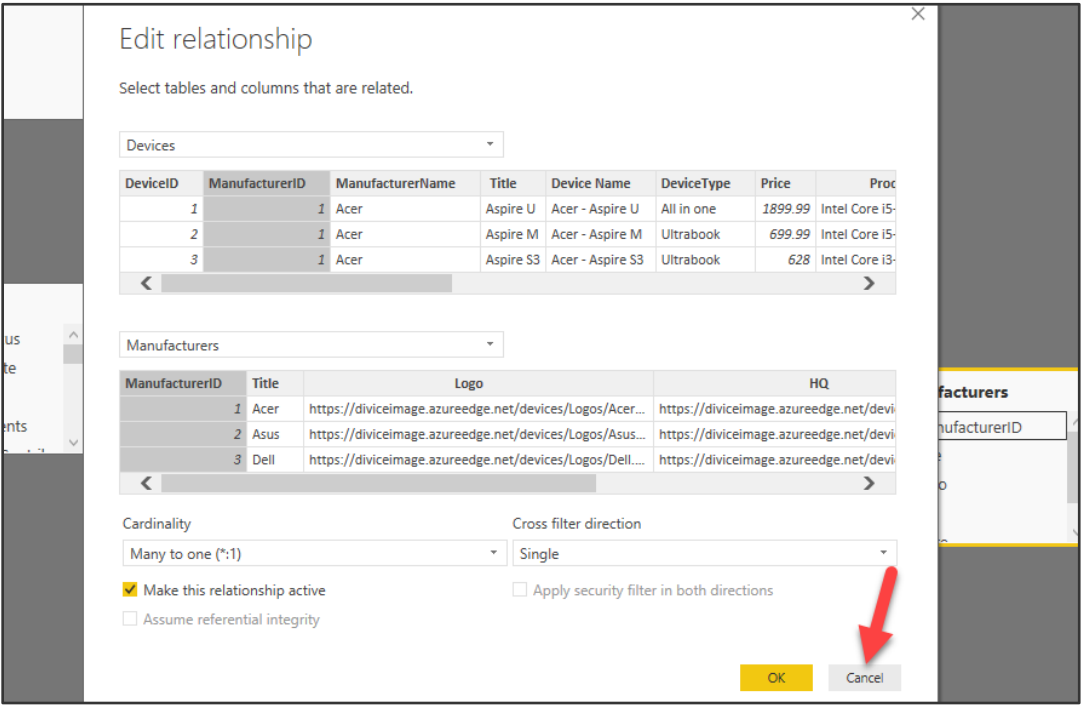
1. Select **Relationships** from the left side navigation.



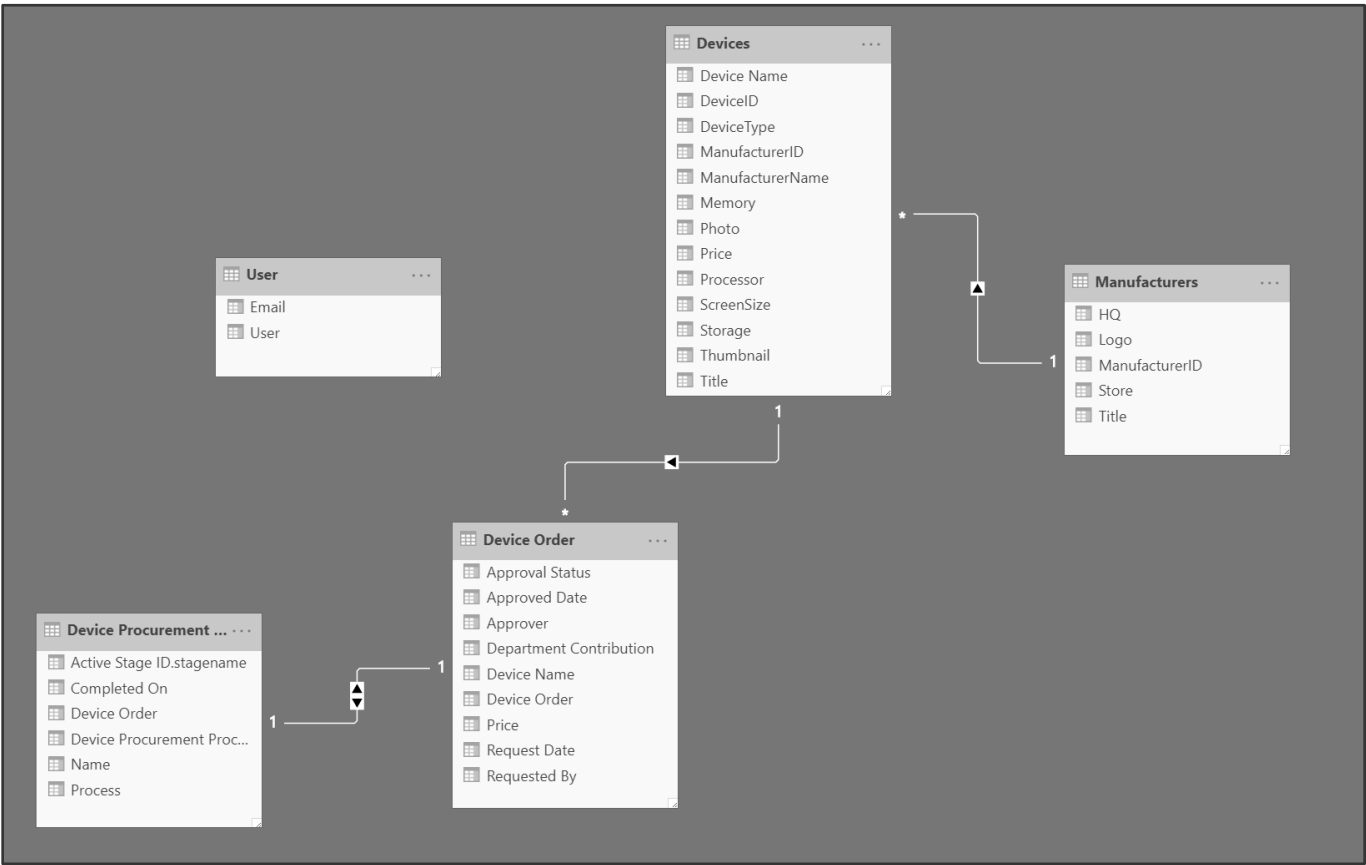
2. Double click the **Devices to Manufacturers** autodetected relationship, this action will load the Edit relationship page. Here you can see the settings on the relationship and make any changes that was required to existing relationships.



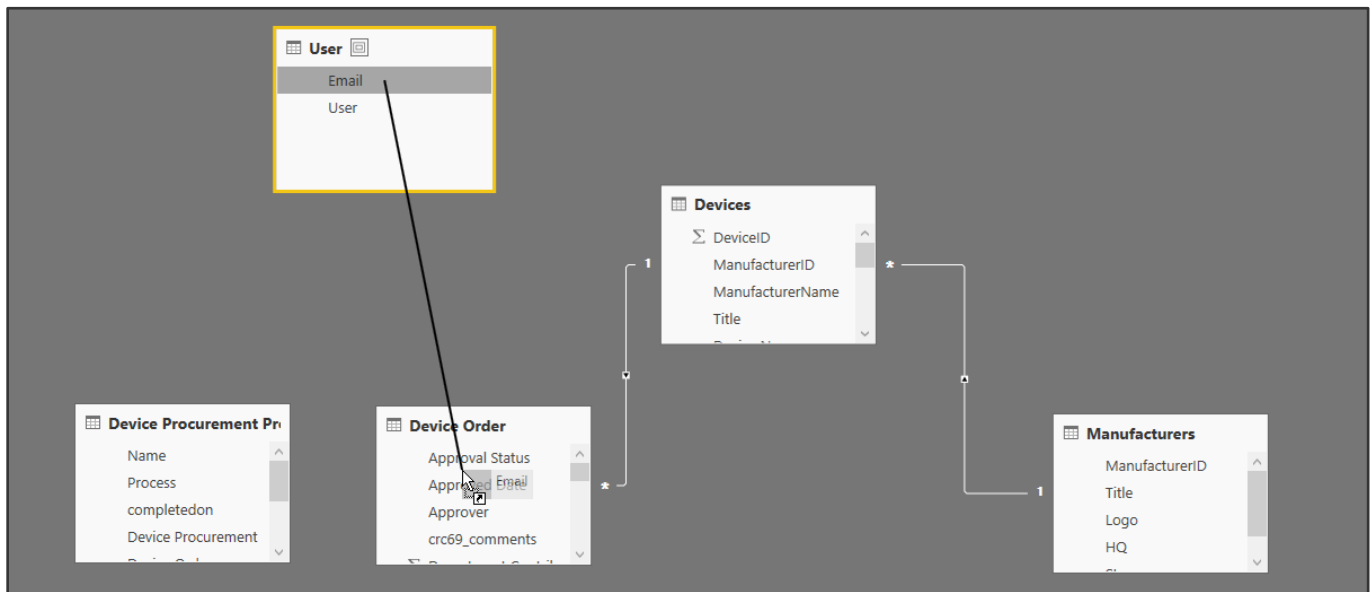
3. Click **Cancel** to close the page.



4. Reposition the table as shown in the image below, so it will be easier to visualize the relationships. If you don't immediately see the User table, scroll left.



5. Drag the Email column of the **User** table to the **Device Order** table and release it.



6. A One to Many relationship will be created. Double click on the new relationship to edit the properties
7. Select **Requested By** from the **Device Order** table and **Email** from **User** table. Click **OK**. *Note: Yes the Requested By should also have e-mails in order for them to match, this is just different in the historical data you imported and won't impact your results in this lab.*

Device Order

	Estimated Ship Date	Price	Requested Date	Requested By	Capital Approved	Device Configured
0f992	7/29/2018 6:00:00 AM	999.99	7/5/2018 6:00:00 AM	Berenice Zarrella	False	Fal
0f992	11/20/2017 7:00:00 AM	999.99	10/25/2017 6:00:00 AM	Florencia Gee	False	Fal
0f992	6/14/2018 6:00:00 AM	999.99	5/27/2018 6:00:00 AM	Milagro Spires	False	Fal

User

Email	User
crmoln@microsoft.com	Support User
crmoln2@microsoft.com	Delegated Admin
bap_sa@microsoft.com	Business Application Platform Service account

Cardinality: Many to one (\*:1)

Cross filter direction: Single

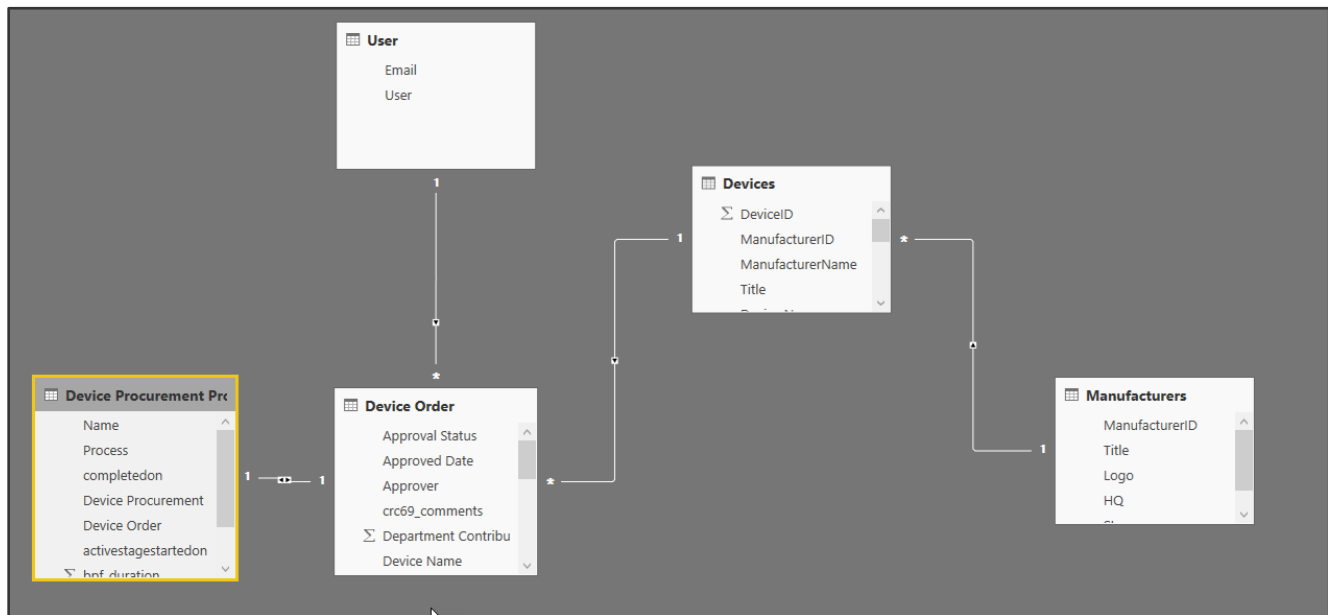
☒ Make this relationship active

☐ Assume referential integrity

☐ Apply security filter in both directions

**OK** **Cancel**

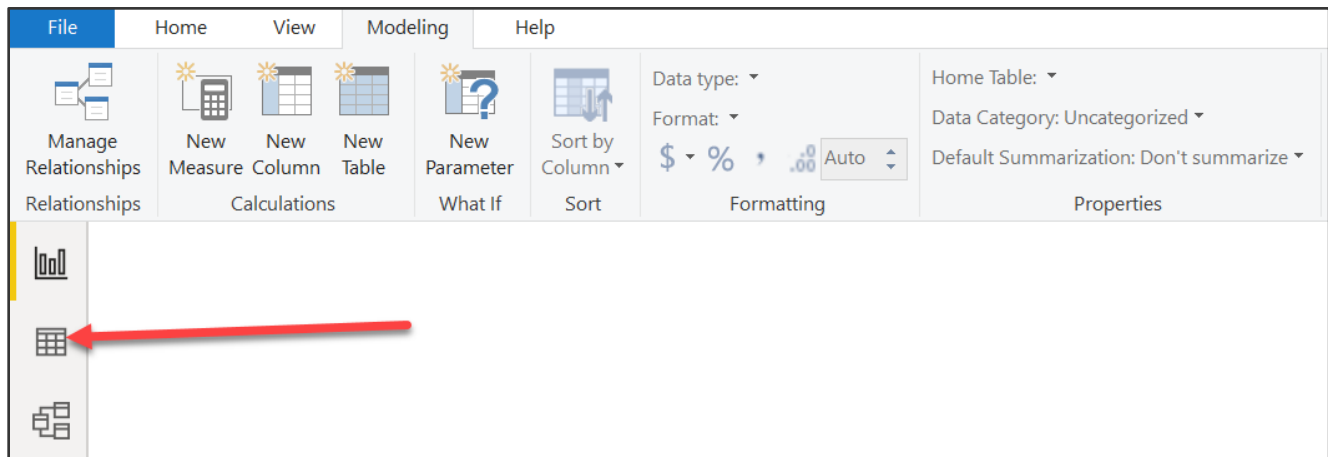
8. Your relationships will now look like the image below.



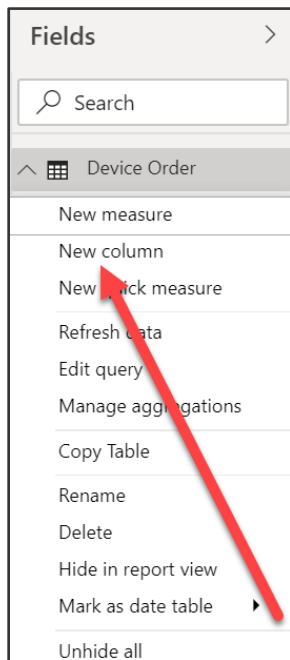
## Task 2: Add Link to the CDS Record Form

A common ask when building a Power BI visual of CDS data is to allow the user to open the record using the CDS form. In this task you will build a column that will be a link to directly open the record.

1. Select **Data**.



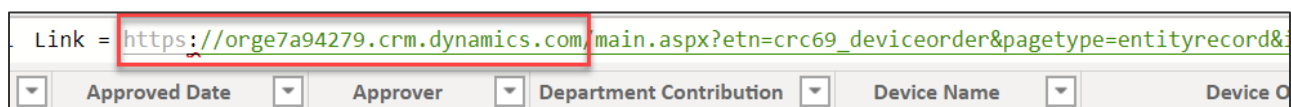
2. Right click on the **Device Order** table and select **New Column**.



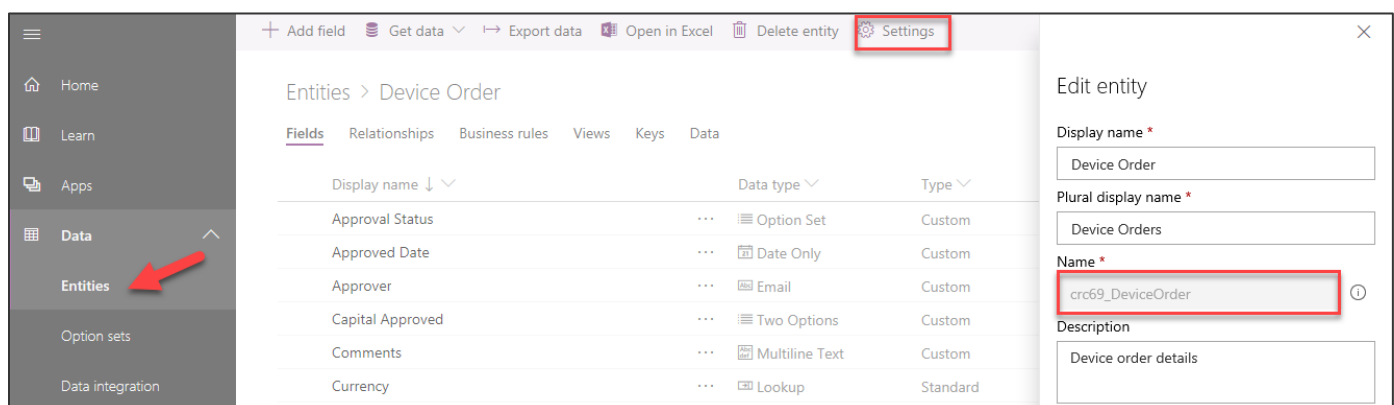
3. Provide the function below to build the column value. This needs to be adjusted to match your organization url and entity type name that can vary from environment to environment, for now paste it in exactly like you have below

Link = "https://orgb0a32835.crm.dynamics.com/main.aspx?etn=crc69\_deviceorder&pagetype=entityrecord&id=%7B"&'Device Order'[Device Order]&"%7D"

4. Now get your organization URL, you can get this from [Admin Power Platform](#) by selecting the environments and then ... and then open copy the url and replace it in the function



5. Next, we need to get the entity schema name for Device Order. You can get that by going to make.powerapps.com>Data>Entities>Device Order>Settings, and copy the prefix of the entity.



6. If your value is different than what is in the Link function, replace it in Power BI. This value can vary from environment to environment

Link = <a &amp;'device="" href="https://org7a94279.crm.dynamics.com/main.aspx?etn=crc69_deviceorder&amp;pagetype=entityrecord&amp;id=%7B" order'"="">https://org7a94279.crm.dynamics.com/main.aspx?etn=crc69_deviceorder&amp;pagetype=entityrecord&amp;id=%7B"&amp;'Device Order'</a>					
Approved Date	Approver	Department Contribution	Device Name	Device Order	

7. Select the new column and from the **Column tools** tab click on the **Data Category** dropdown.

File Home Help Table tools Column tools					
Name	Link	Format	Text	Summarization	Don't summarize
Data type	Text	Format	\$ % , -00 Auto	Data category	Uncategorized
Structure Formatting Properties					
1 Link = "https://org06ecb02a.crm.dynamics.com/main.aspx?etn=crd38_deviceorder&pagetype=entityrecord&id=%7B"&'Device Order'[Device Order]&"%7D"					
Device Name	Device Order	Price	Request Date	Requested By	Link
130 Dell - XPS 15	7caeb862-9989-ea11-a811-000d3a569702	1299.99	4/28/2020 6:00:00 AM	admin@M365x532063.onmicrosoft.com	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c
100 Asus - N56VJ	c2d2fdf9-538a-ea11-a811-000d3a569702	999.99	10/31/2017 12:00:00 AM	Chieko Swofford	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c
50 Dell - Inspiron One 20	cdd2fdf9-538a-ea11-a811-000d3a569702	499.99	7/25/2018 12:00:00 AM	Lauren Singh	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c
140 Acer - Aspire S7	d2d2fdf9-538a-ea11-a811-000d3a569702	1399.99	10/19/2017 12:00:00 AM	Carla Delancey	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c
50 Dell - XPS 10	d9d2fdf9-538a-ea11-a811-000d3a569702	499.99	5/4/2018 12:00:00 AM	Jona Rhoades	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c

8. Select **Web URL**.

File Home Help Table tools Column tools					
Name	Link	Format	Text	Summarization	Don't summarize
Data type	Text	Format	\$ % , -00 Auto	Data category	Uncategorized
Structure Formatting Properties					
1 Link = "https://org06ecb02a.crm.dynamics.com/main.aspx?etn=crd38_deviceorder&pagetype=entityrecord&id=%7B"&'Device Order'[Device Order]&"%7D"					
Device Name	Device Order	Price	Request Date	Requested By	Link
130 Dell - XPS 15	7caeb862-9989-ea11-a811-000d3a569702	1299.99	4/28/2020 6:00:00 AM	admin@M365x532063.onmicrosoft.com	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c
100 Asus - N56VJ	c2d2fdf9-538a-ea11-a811-000d3a569702	999.99	10/31/2017 12:00:00 AM	Chieko Swofford	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c
50 Dell - Inspiron One 20	cdd2fdf9-538a-ea11-a811-000d3a569702	499.99	7/25/2018 12:00:00 AM	Lauren Singh	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c
140 Acer - Aspire S7	d2d2fdf9-538a-ea11-a811-000d3a569702	1399.99	10/19/2017 12:00:00 AM	Carla Delancey	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c
50 Dell - XPS 10	d9d2fdf9-538a-ea11-a811-000d3a569702	499.99	5/4/2018 12:00:00 AM	Jona Rhoades	https://org06ecb02a.crm.dynamics.com/main.aspx?etn=c

Uncategorized

Address

Place

City

County

State or Province

Postal code

Country

Continent

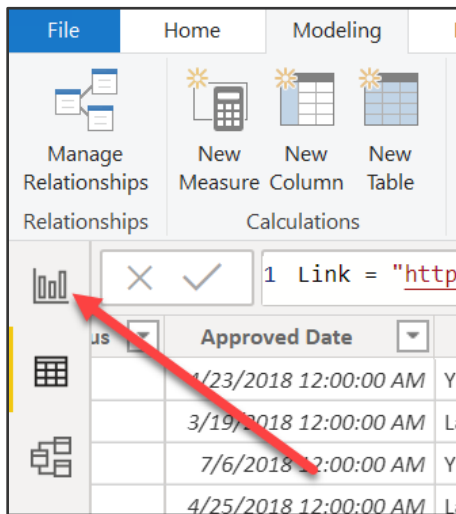
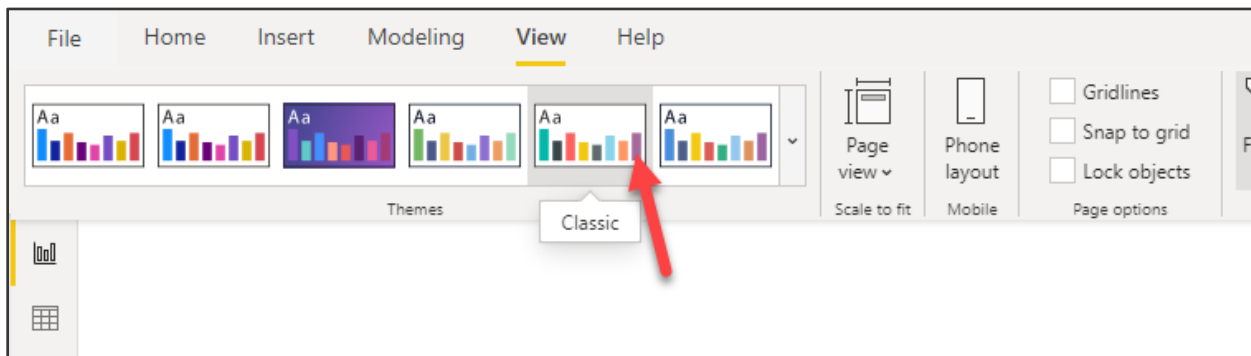
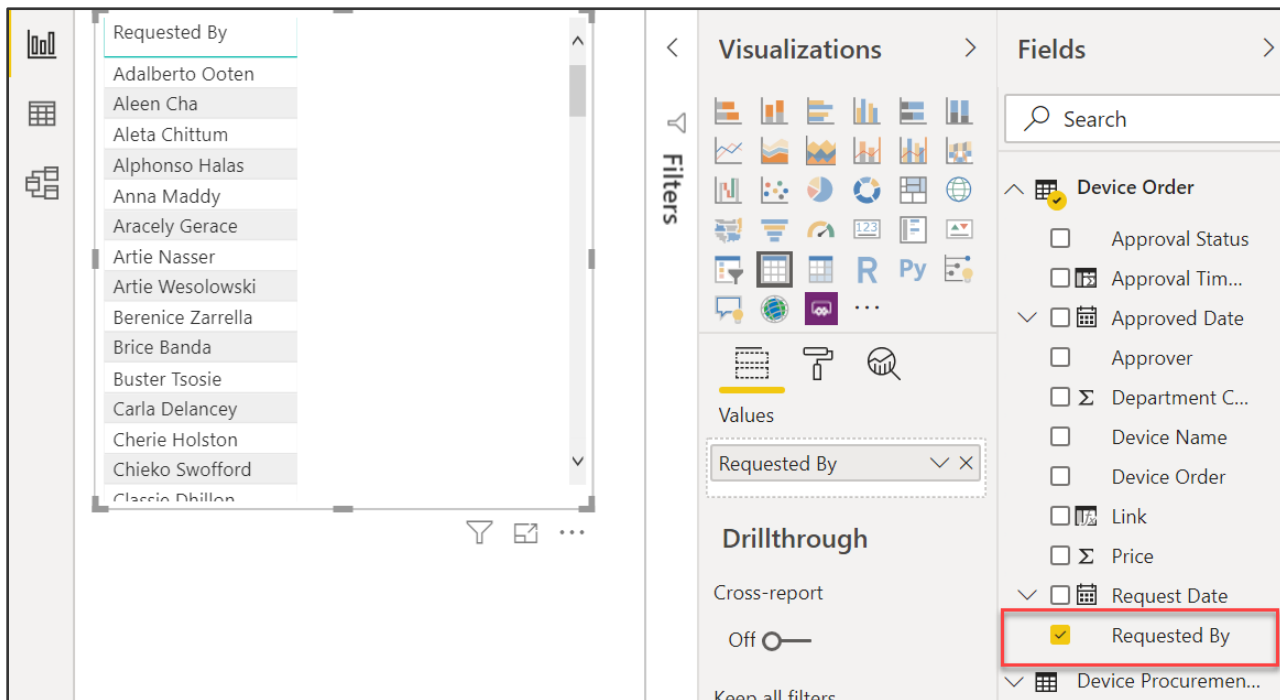
Latitude

Longitude

Web URL

Image URL

Barcode

9. Select **Reports**.10. From the View tab and switch the theme to **Classic**.11. Expand the **Device Order** table and select **Requested By**.

12. Select **Approver**, **Approval Status**, **Price**, **Device Name**, and **Link** from the Device Order table.

The screenshot shows the Power BI interface with the 'Visualizations' pane on the left and the 'Fields' pane on the right. The 'Fields' pane is expanded to show the 'Device Order' table. The following fields are selected with checkboxes:

- Approval Status
- Approval Tim...
- Approved Date
- Approver
- Department C...
- Device Name
- Device Order
- Link
- Price
- Request Date
- Requested By

Price	Device Name	Link
479.99	Toshiba - Satellite C870-ST3NX3	<a href="https://challengephoto.crm11.dynamics.com/main.aspx?etn=cr2fe_deviceorder&amp;pagetype=entityrecord&amp;id=%7B00e578c6-0288-e911-a980-0022480149c2%7D">https://challengephoto.crm11.dynamics.com/main.aspx?etn=cr2fe_deviceorder&amp;pagetype=entityrecord&amp;id=%7B00e578c6-0288-e911-a980-0022480149c2%7D</a>
1,499.00	Asus - Eee Slate B121	<a href="https://challengephoto.crm11.dynamics.com/main.aspx?etn=cr2fe_deviceorder&amp;pagetype=entityrecord&amp;id=%7B013171cc-0288-e911-a980-0022480149c2%7D">https://challengephoto.crm11.dynamics.com/main.aspx?etn=cr2fe_deviceorder&amp;pagetype=entityrecord&amp;id=%7B013171cc-0288-e911-a980-0022480149c2%7D</a>
1,299.99	Samsung - Series 9 13.3	<a href="https://challengephoto.crm11.dynamics.com/main.aspx?etn=cr2fe_deviceorder&amp;pagetype=entityrecord&amp;id=%7B018592ae-0288-e911-a980-0022480149c2%7D">https://challengephoto.crm11.dynamics.com/main.aspx?etn=cr2fe_deviceorder&amp;pagetype=entityrecord&amp;id=%7B018592ae-0288-e911-a980-0022480149c2%7D</a>

13. Select the **Format** tab

The screenshot shows the Power BI interface with the 'Visualizations' pane on the left and the 'Fields' pane on the right. The 'Fields' pane is expanded to show the 'Device Order' table. The following fields are selected with checkboxes:

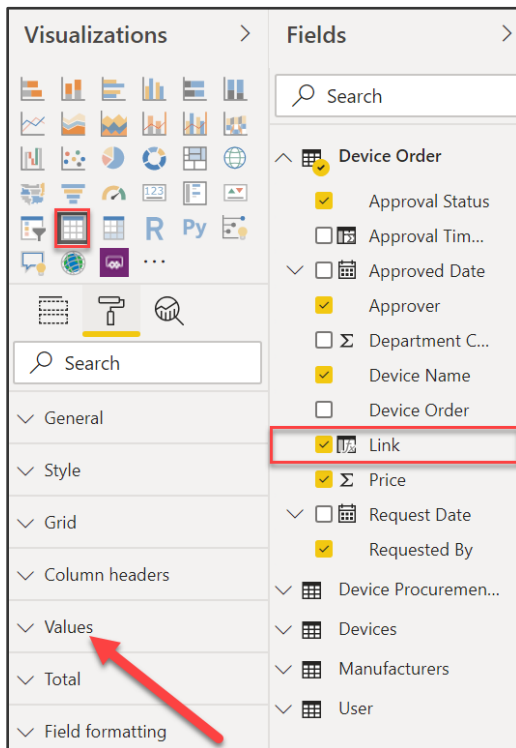
- Approval Status
- Approval Stat..
- Approved Date
- Approver
- Department C.
- Device Name
- Device Order
- Link

The 'Format' tab is selected in the 'Visualizations' pane. The 'Filters' pane on the left shows the following filters:

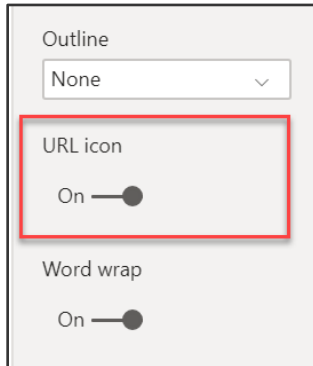
- Requested By
- Approver



14. Select the **Link** column and from the **Format** tab, expand **Values**.



15. Turn on the **URL Icon**.



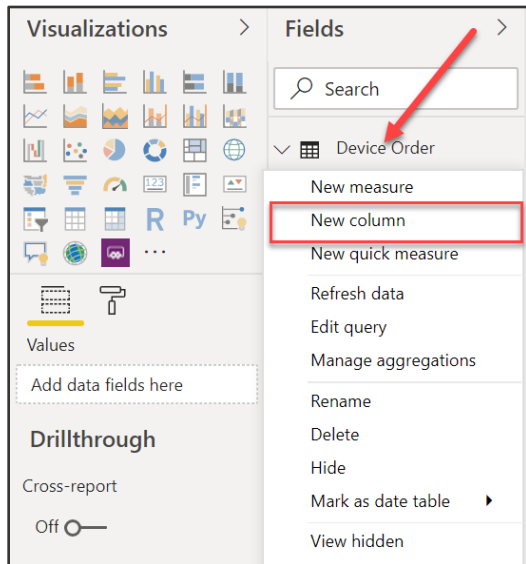
16. Click on the link. Your CDS record should open.

Requested By	Approver	Approval Status	Price	Device Name	Link
Inna Maddy	Patience Patman	Approve	1,299.99	Asus - ET2701INTI	<a href="#">Link</a>
Artie Nasser	Emanuel Chapdelaine	Approve	799.99	Sony - VAIO S	<a href="#">Link</a>
Thieko Swofford	Latrice Critelli	Approve	879.00	Lenovo - B540	<a href="#">Link</a>
Morsche Espinal	Filomena Boldt	Approve	699.99	Lenovo - Essential G Series	<a href="#">Link</a>
Colleen Garn	Gita Vannote	Approve	699.99	Lenovo - G480	<a href="#">Link</a>
Concetta Nagao	Emanuel Chapdelaine	Approve	419.99	Samsung - Series 3 15.6	<a href="#">Link</a>
Katharina Mazon	Joanna Hoos	Approve	379.99	Acer - Aspire E	<a href="#">Link</a>
Alphonso Halas	Latrice Critelli	Reject	419.99	Samsung - Series 3 15.6	<a href="#">Link</a>
Terline Younce	Yuri Mignone	Reject	1,399.99	Asus - ET2411INTI	<a href="#">Link</a>
Amey Revard	Emanuel Chapdelaine	Reject	1,099.99	Asus - Zenbook	<a href="#">Link</a>
Susan Coover	Patience Patman	Approve	1,349.00	HP - HP EliteBook Folio 9470m	<a href="#">Link</a>

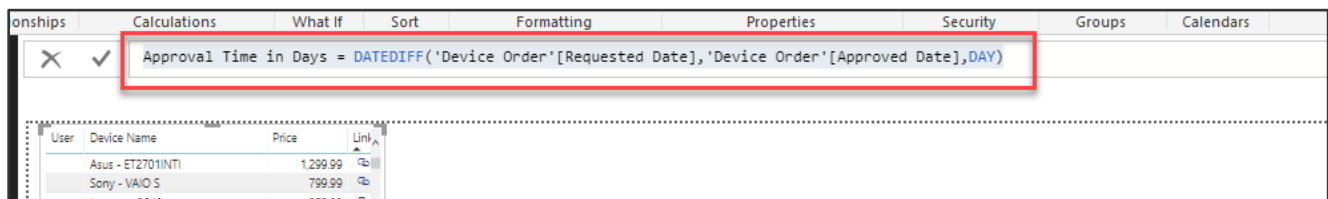
## Task 3: Add a Calculated Field for approval time

In this task, you will add a calculated column with the approval time in days, you will add a column chart to the report page.

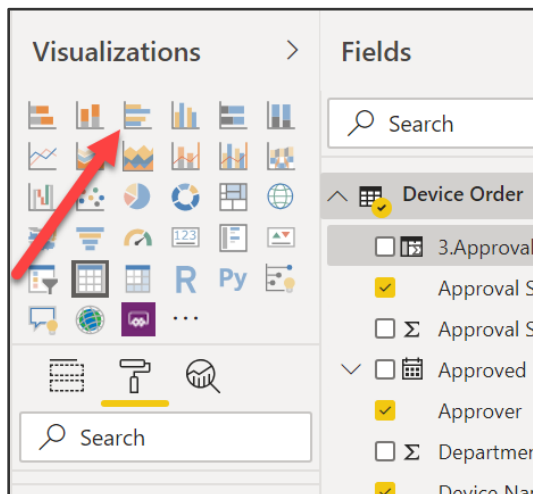
1. Right click on the **Device Order** table and select **New Column**.



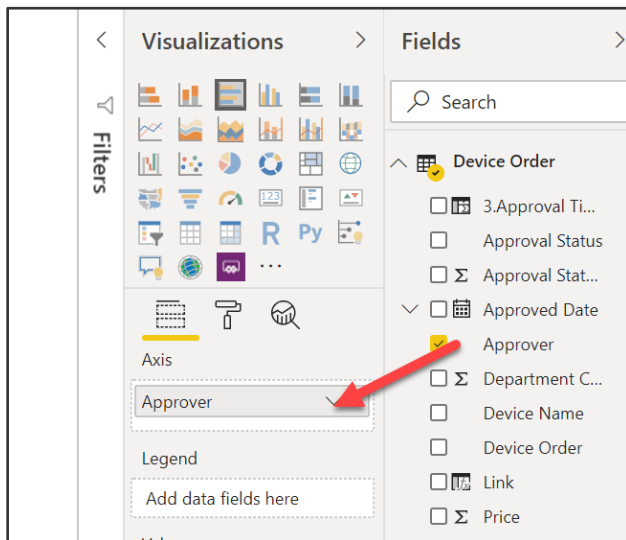
2. Type in the formula bar.  
Approval Time in Days = DATEDIFF('Device Order'[Request Date], 'Device Order'[Approved Date], DAY)



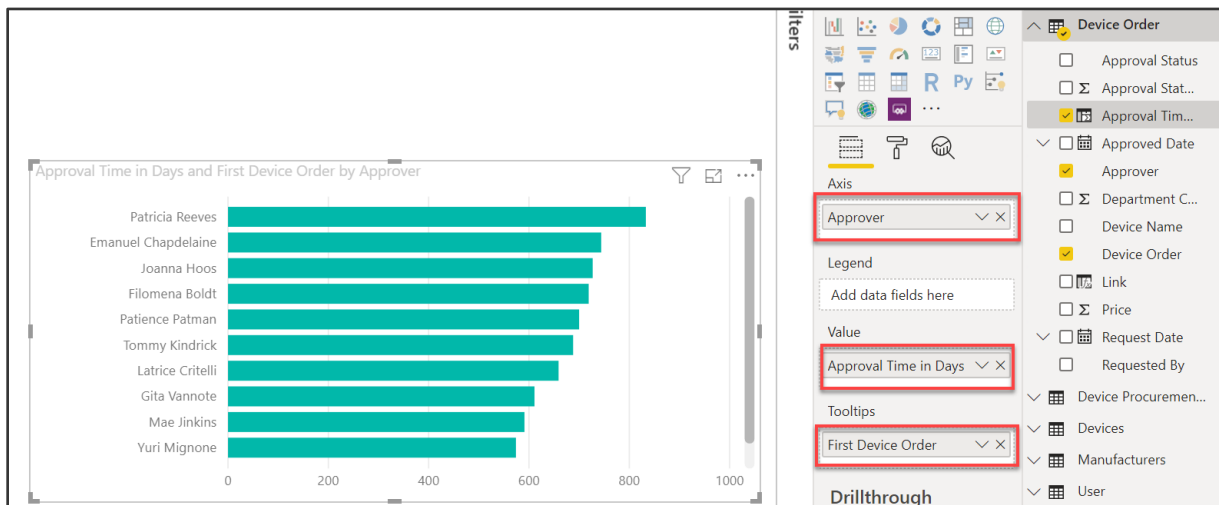
3. Select the canvas to make sure the list of device orders is no longer selected
4. Click **Clustered Bar Chart**.



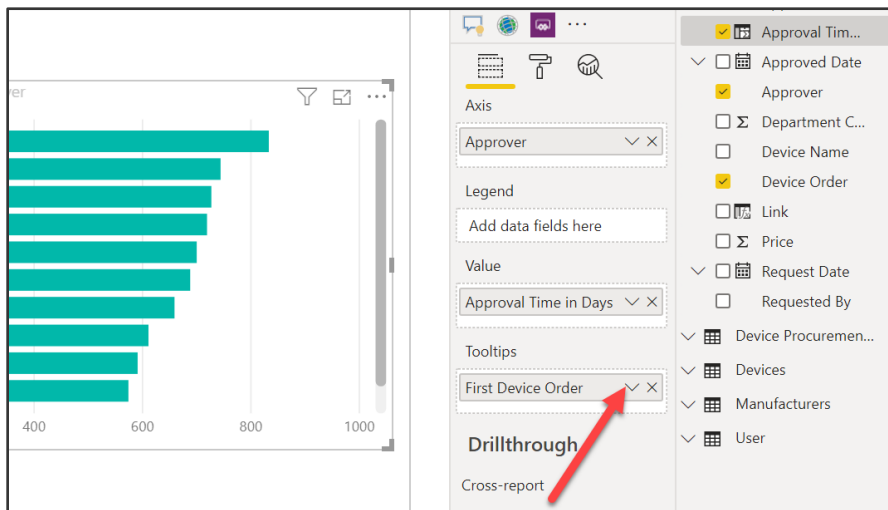
5. Select the chart you added, drag the **Approver** column and drop it in the **Axes** target.



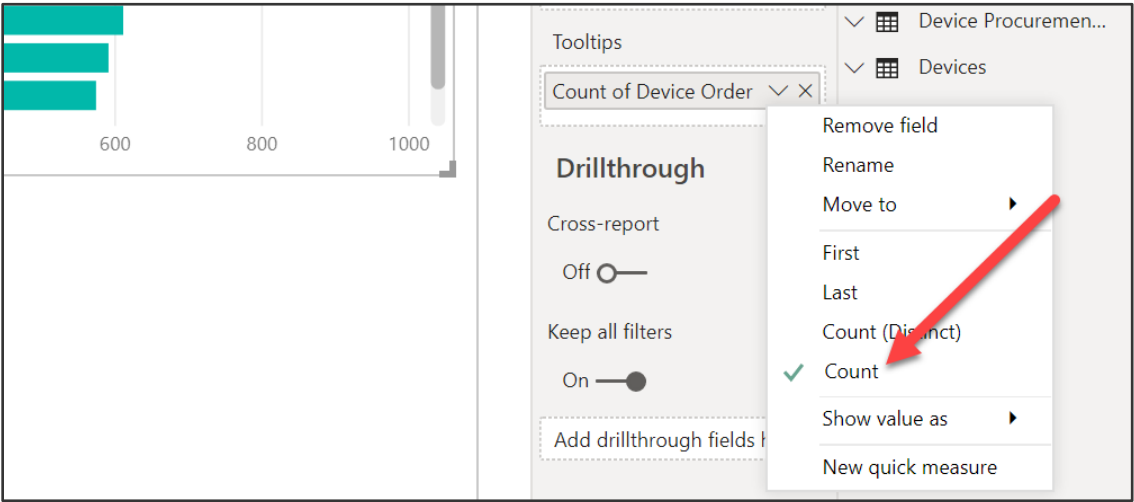
6. Drag **Approval Time in Days** to the Value target and drag **Device Order** to the Tooltip target.



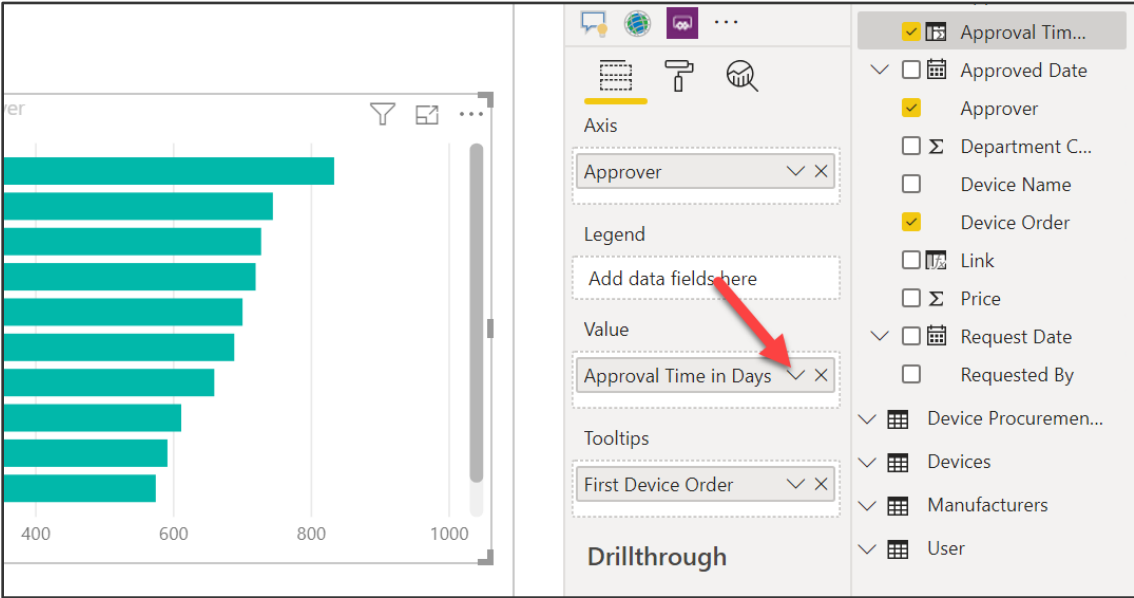
7. Click on the dropdown button next to the **First Device Order**.



8. Select **Count**.



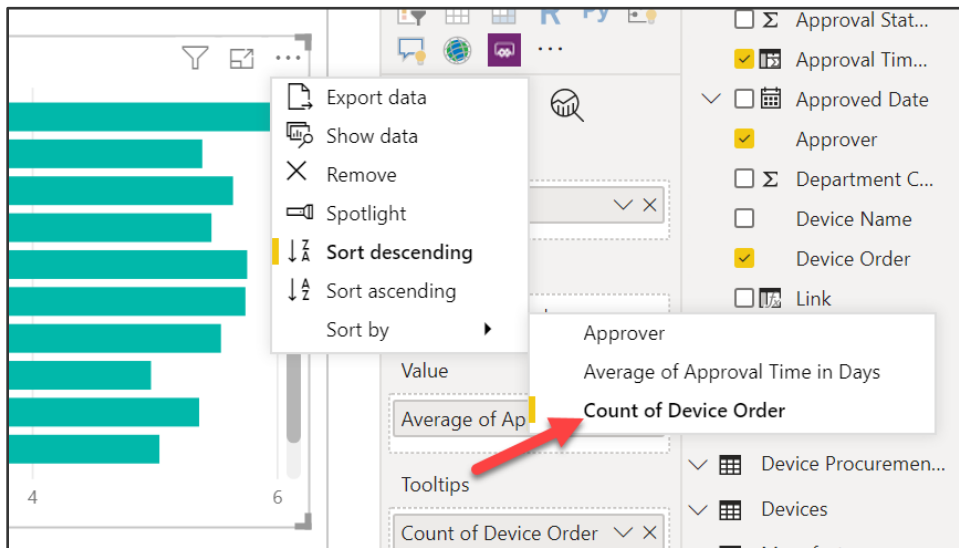
9. Click on the dropdown button next to the **Approval Time in Days**.



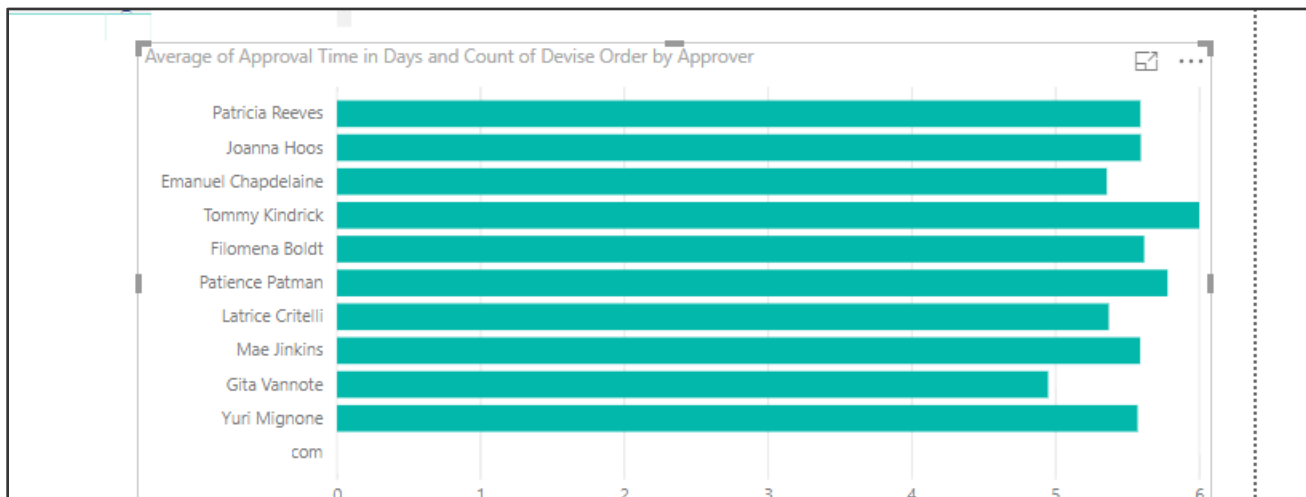
10. Select **Average**.



11. Click on the chart ellipses (the ...), click **Sort By**, and select **Count of Device Order**.



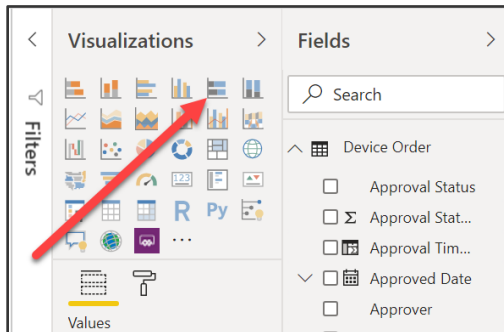
12. Your chart should now look like the image below.



# Exercise 5: Add visuals to the report

## Task 1: Add Stacked Bar Chart of orders

1. Select an empty area of the canvas and click on the **Stacked Bar Chart**.



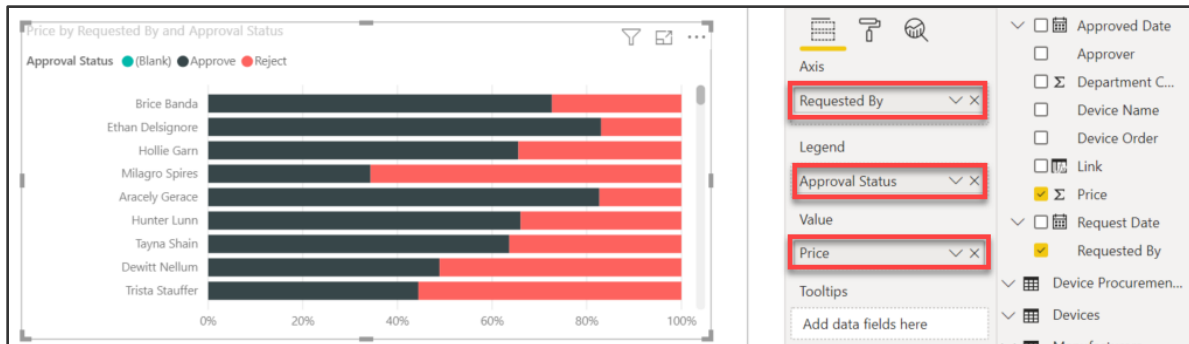
2. Select the columns below for the stacked bar chart.

**Requested By** for **Axis**.

**Approval Status** for **Legend**.

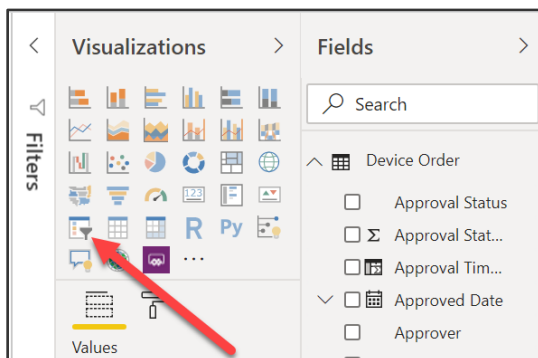
**Price** for **Value**.

Note: Your chart may not look the same based on how many rejected items you have in your data. You can edit the records in CDS and reject more if you want!

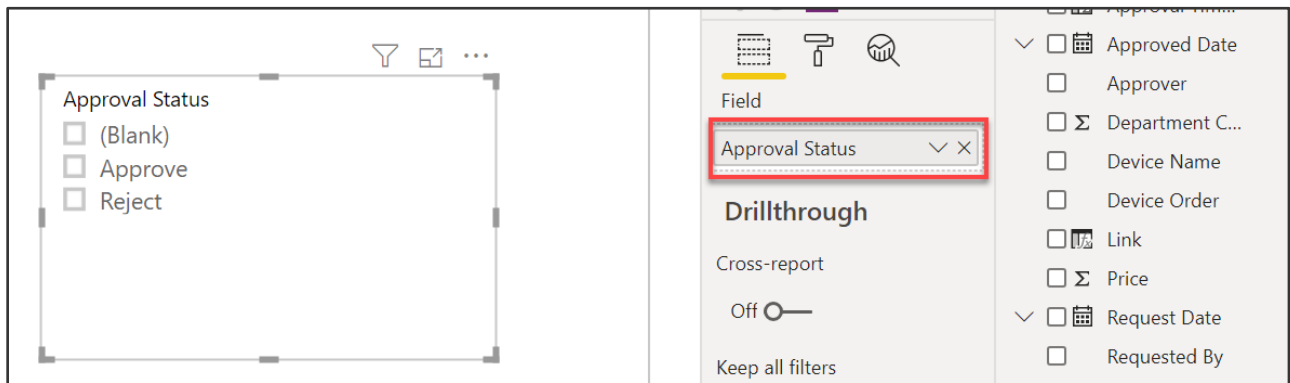


## Task 2: Add a Slicer on Approval Status

1. Select an empty area of the canvas and click **Slicer**.

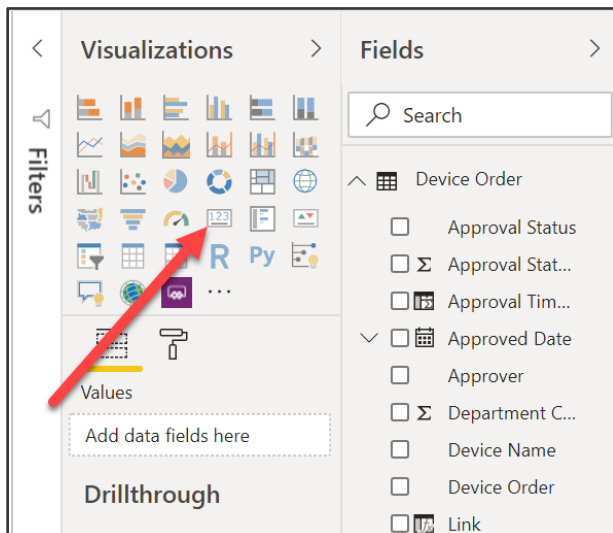


2. Drag the **Approval Status** to the **Field** target.

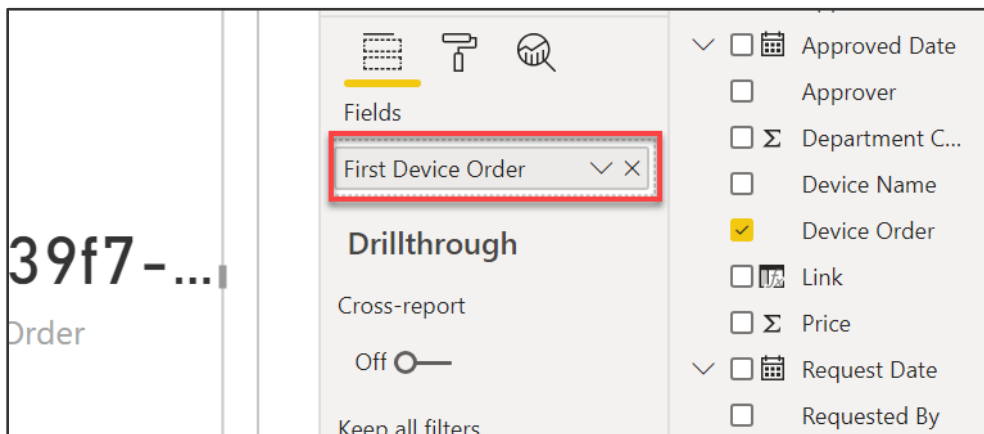


## Task 3: Add Cards with Device Order statistics

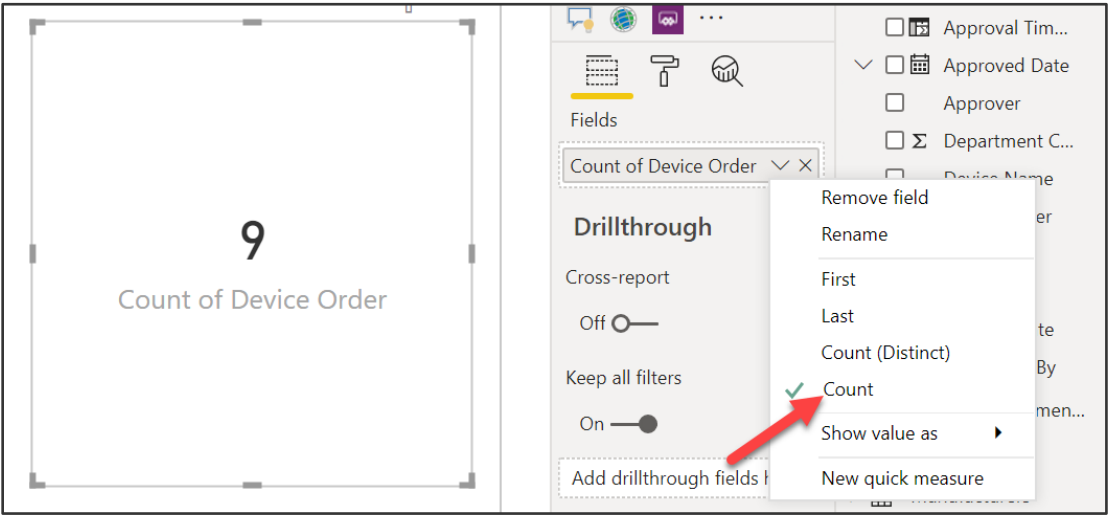
1. Select an empty area of the canvas and click **Card**.



2. This card will show the total count of devices ordered. Select the card and drag **Device Order** to the **Fields** target.

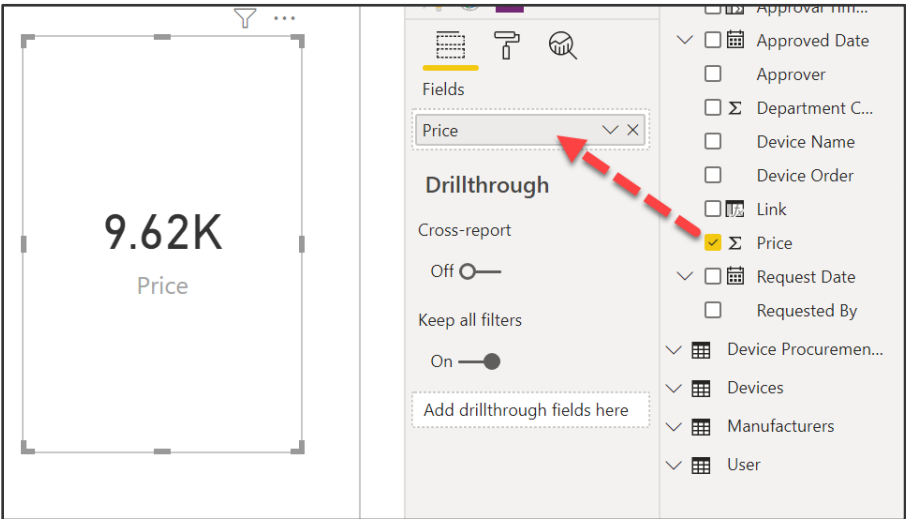


3. Select Count.

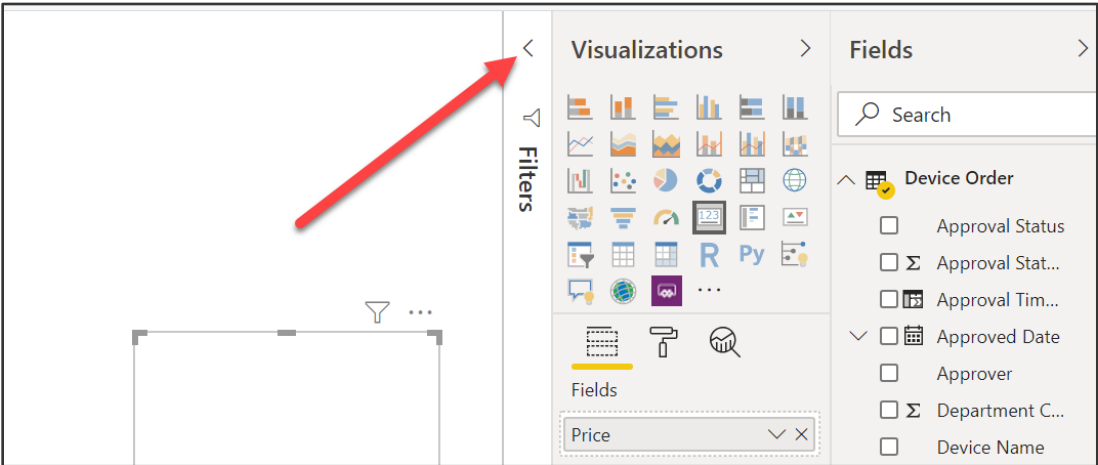


4. Add another Card to the canvas. This card will display total amount spent on approved devices.

5. Drag the **Price** to the **Fields** target

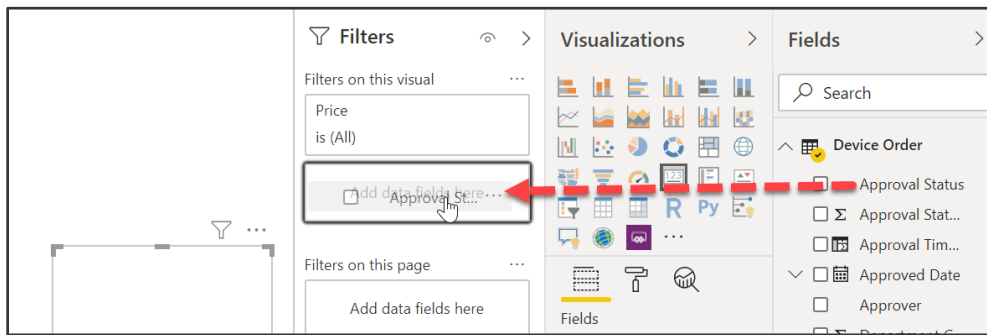


6. Click to expand the Filters pane.

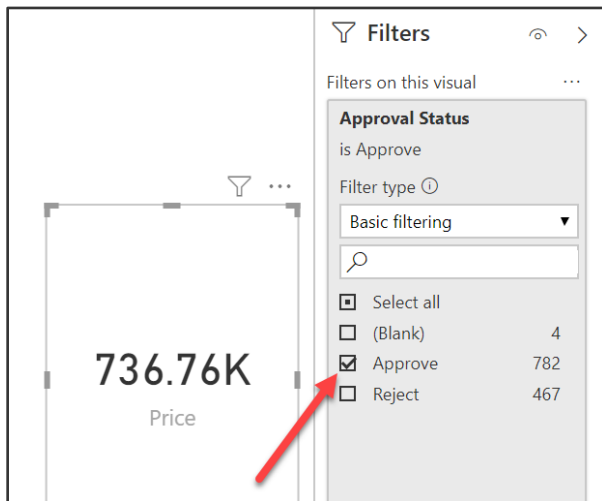




7. Drag the **Approval Status** to the **Filters** on this Visual target.



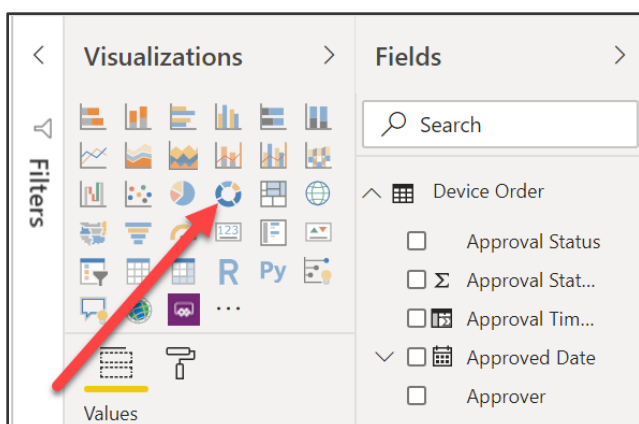
8. Select **Approve** to filter the amount only to those orders that are approved.



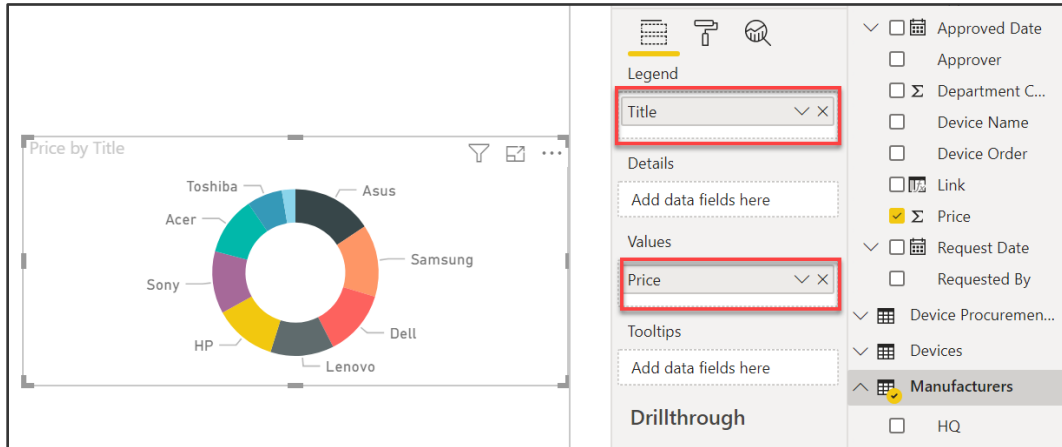
## Task 4: Add a Donut Chart by Manufacture

In this task, you will add a Donut to represent the amount spent by manufacture. This can provide a quick visual way of allowing the CFO or other financial management staff to look at which manufactures they want to negotiate better pricing with. You can also click on a segment of the donut to filter the rest of the page to just that manufacture.

1. Add a Donut Chart to the canvas.

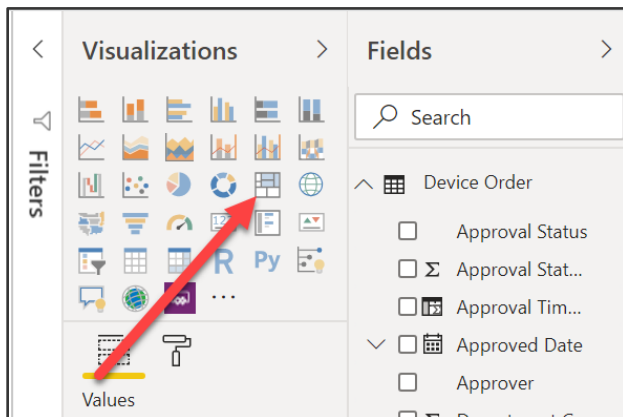


2. Drag **Title** from the **Manufacturers** table to the **Legend** target and **Price** from the **Devices** table to the **Values** target.

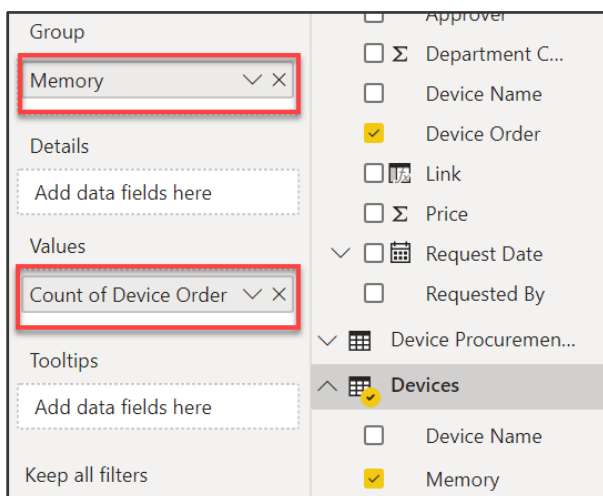


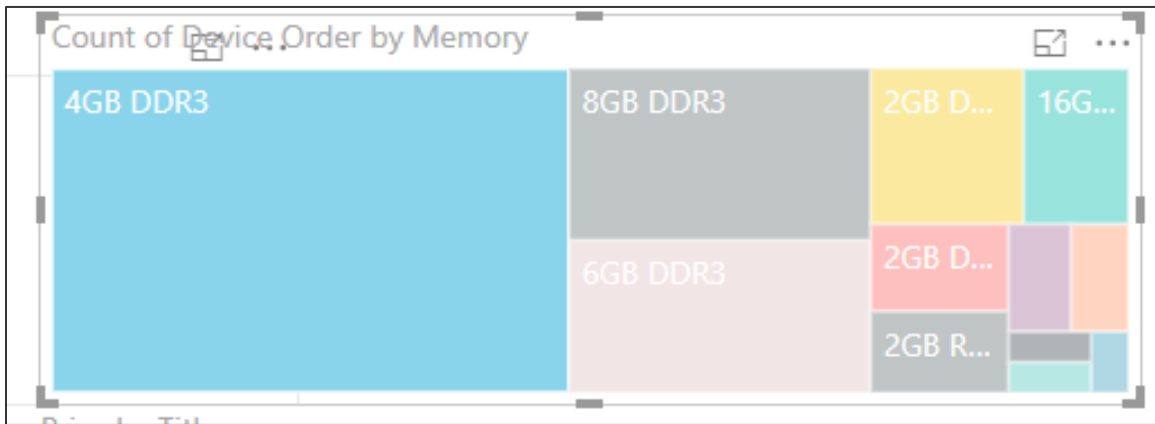
## Task 5: Add a Tree Map by Device Name

1. Add Tree Map visual to the canvas.



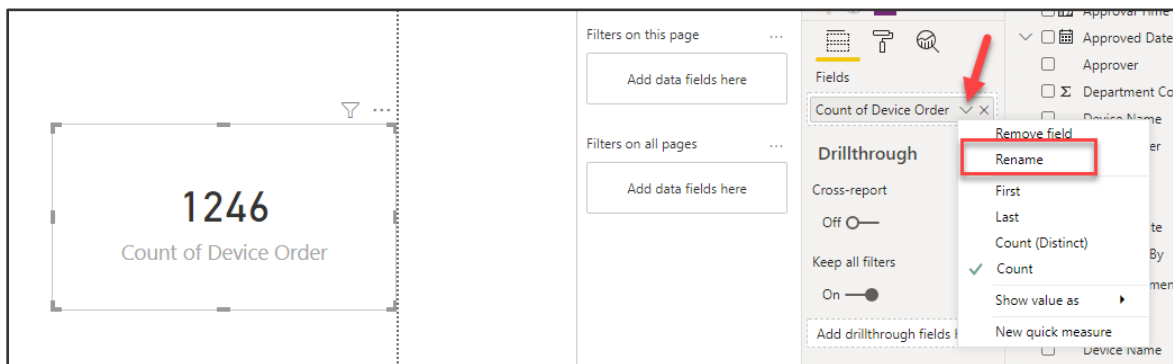
2. Drag **Memory** from the **Devices** table to the **Group** target and **Device Order** from **Device Order table** to the **Values** target.



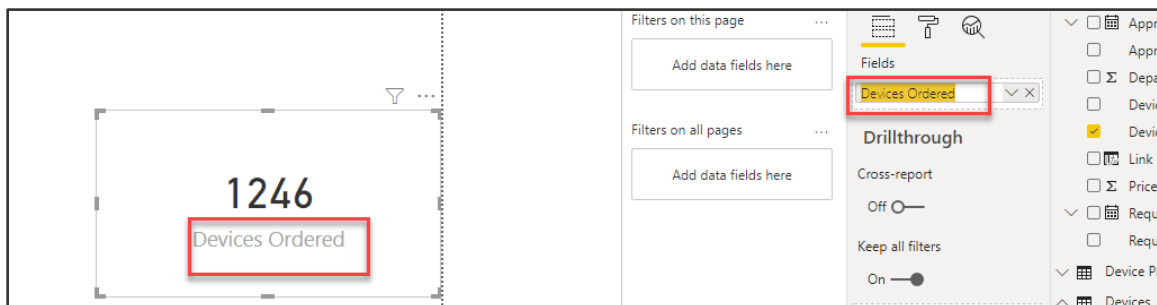


## Task 6: Format the Statistics Cards

1. Select the **Count of Device Order** card and click **Rename**.



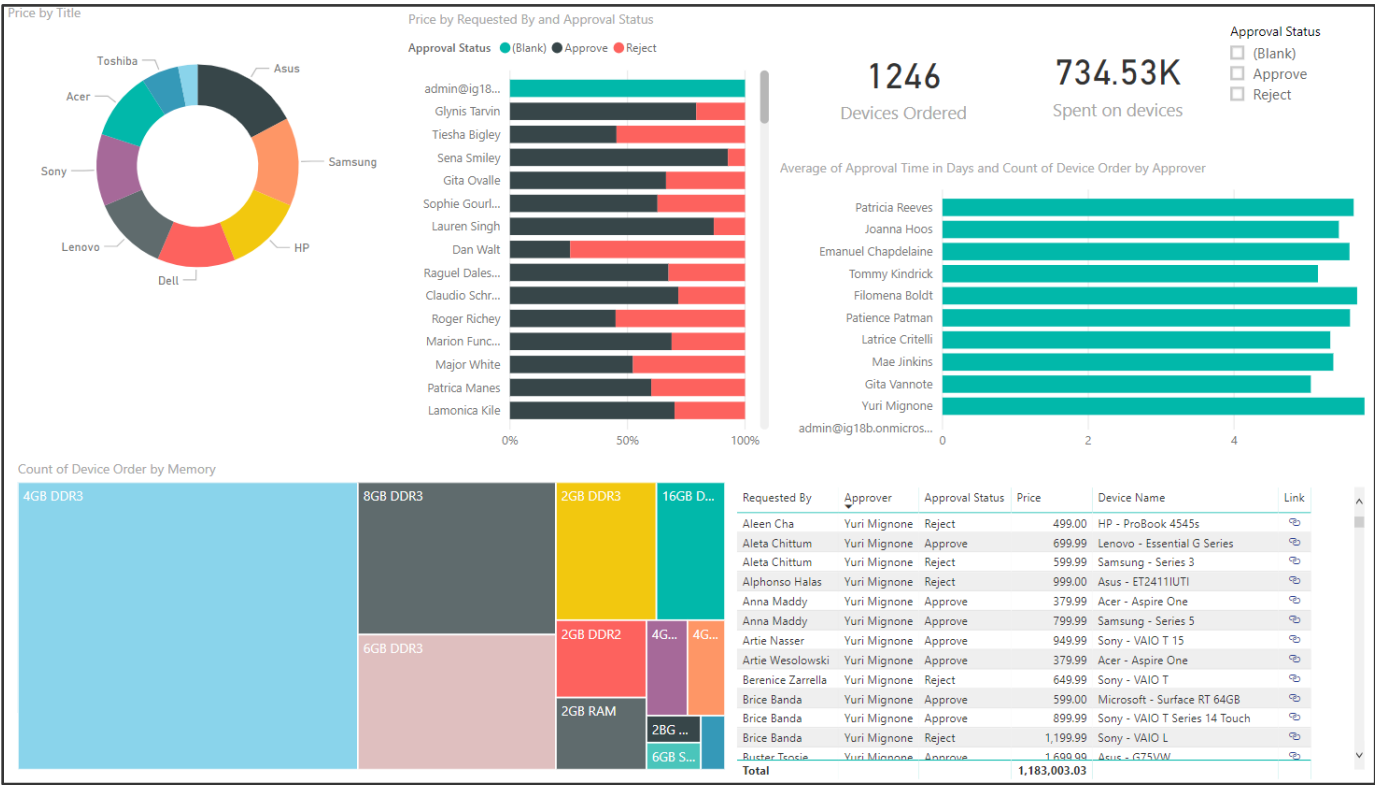
2. Rename it **Devices Ordered**.



3. You may rename other visuals as you see appropriate.

# Task 7: Arrange the visuals on the report page

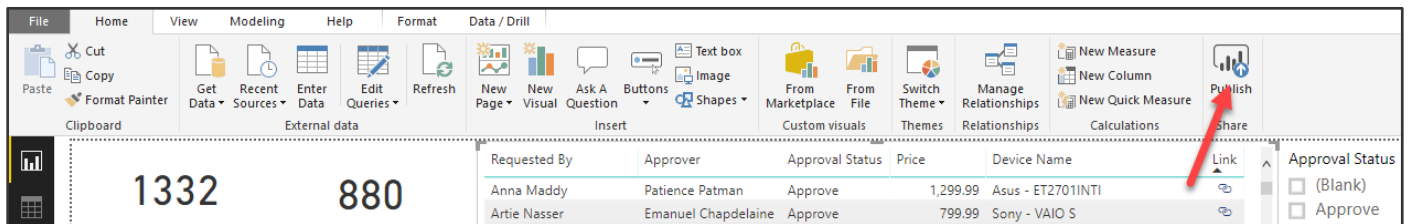
1. Arrange Visuals on the report page as shown in the image below.



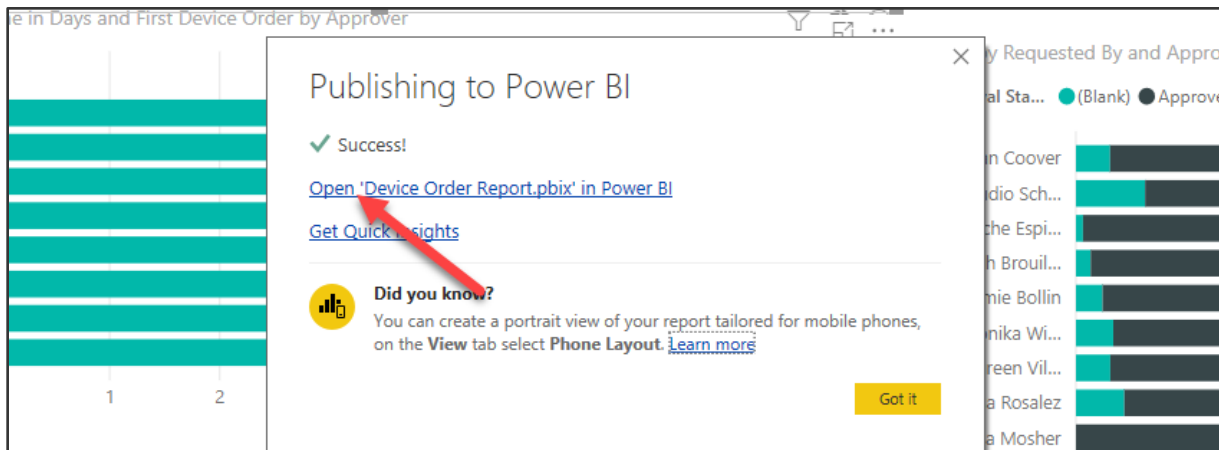
# Exercise 6: Publish and Share

## Task 1: Publish and Share

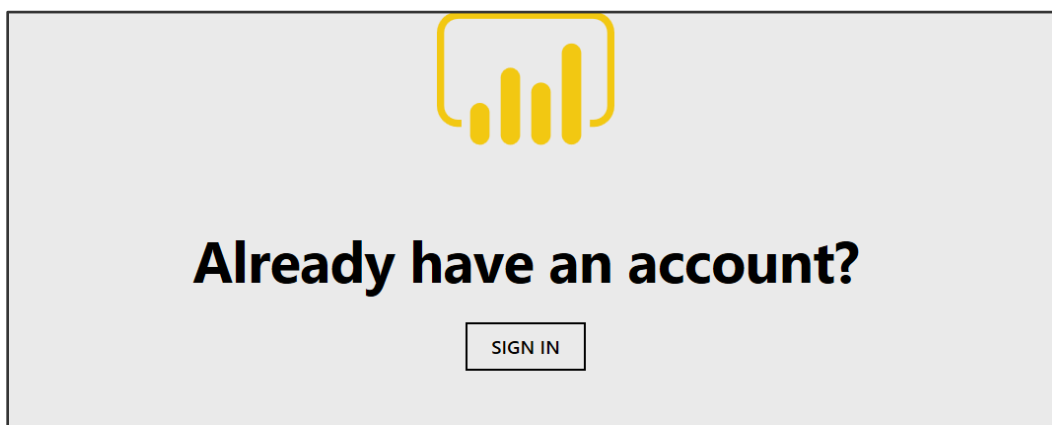
1. Make sure you are logged in in your environment.
2. Click **Save**.
3. Name the report **Device Order Report** and save it on your machine.
4. Click **Publish**.



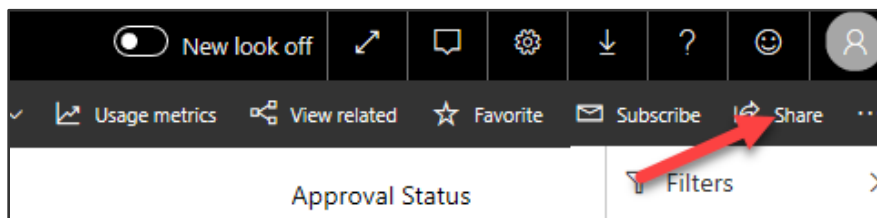
5. Click **Select** to select a workspace and wait for the publishing to complete
6. Click **Open in Power BI**.



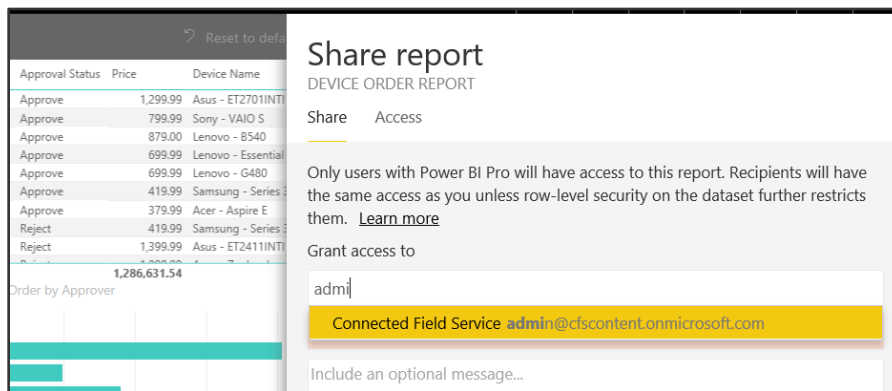
7. Click **Sign in**.



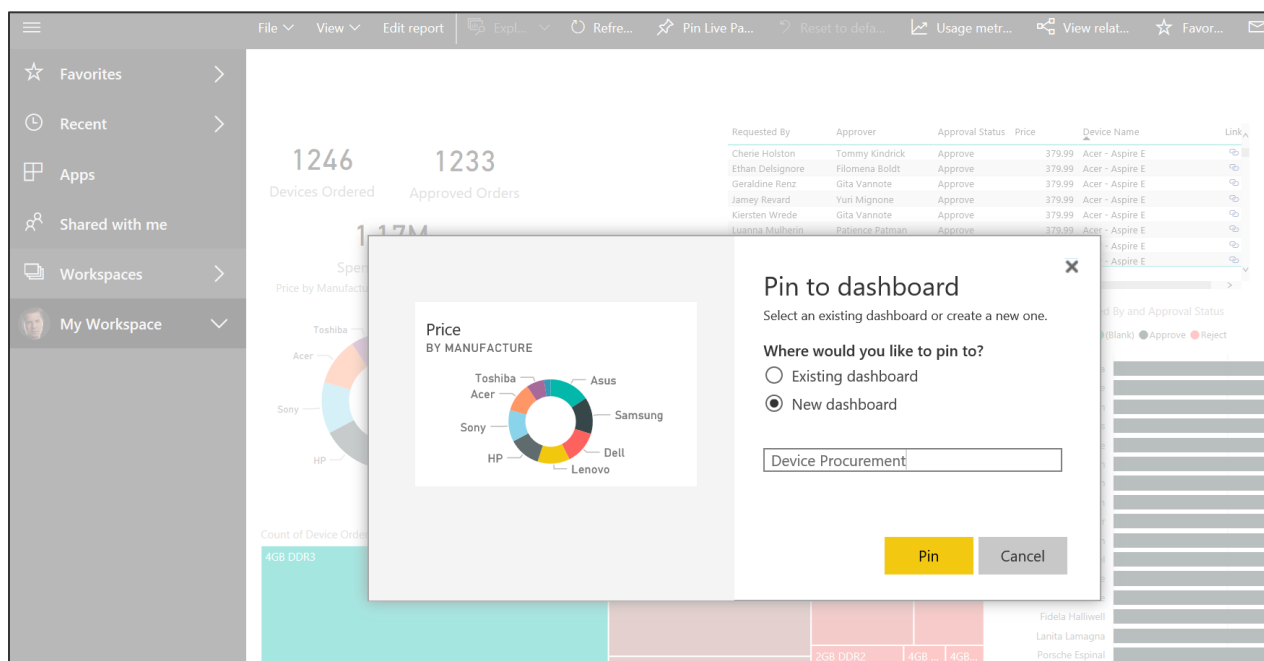
8. Click **Share**.



9. You can share with any user in your organization.



From within PowerBI.Com you can also add the report visualizations to an existing dashboard or create a new dashboard.



You can also embed the Power BI Visualizations in a personal dashboard in CDS. You can read more about that here [Power BI embed](#) if you have time give it a try!

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