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Navigating Fabrication BIM Content with Power BI

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Learning Objectives

- Introduction to Power BI, where it was derived from, and how to navigate.
- Understand how data is imported and manipulated from multiple sources.
- Building relationships between datasets.
- How to import visuals and which ones are best for certain datasets.
- Uploading dashboards to the web for sharing.
- Learn how to create more Power BI dashboards to help understand your organizations data.
- Common Errors and which ones to avoid.
- Tips and Tricks

Description

The easy way to visually audit your fabrication database without opening a single file. This class will be an introduction to Microsoft Power BI and how it can be used for fabrication content managers. Power BI is a business intelligence software that can aggregate and visualize data from hundreds of different sources and formats to let creators view and share their content like never before. By the end of this class, you'll understand the steps that you need to create a live, interactive, and shareable dashboard to make your content auditing more efficient at your workplace.

Speaker Bio

Tyler Phillips started out as a Project Engineer that became an Estimator out of curiosity for information. He now handles Data and Bi Development at Bruner Corporation to help streamline processes across the construction life cycle. He became early adopter of Power BI after realizing its capabilities; if leveraged correctly, would drastically improve the outdated and repetitive workflows specific to the construction business model. His experience using multiple different estimating, ERP, design, and coordination software's has fueled the deep dive into creating solutions that further improve the data navigation experience for all users. Education: Construction Systems Management | The Ohio State University

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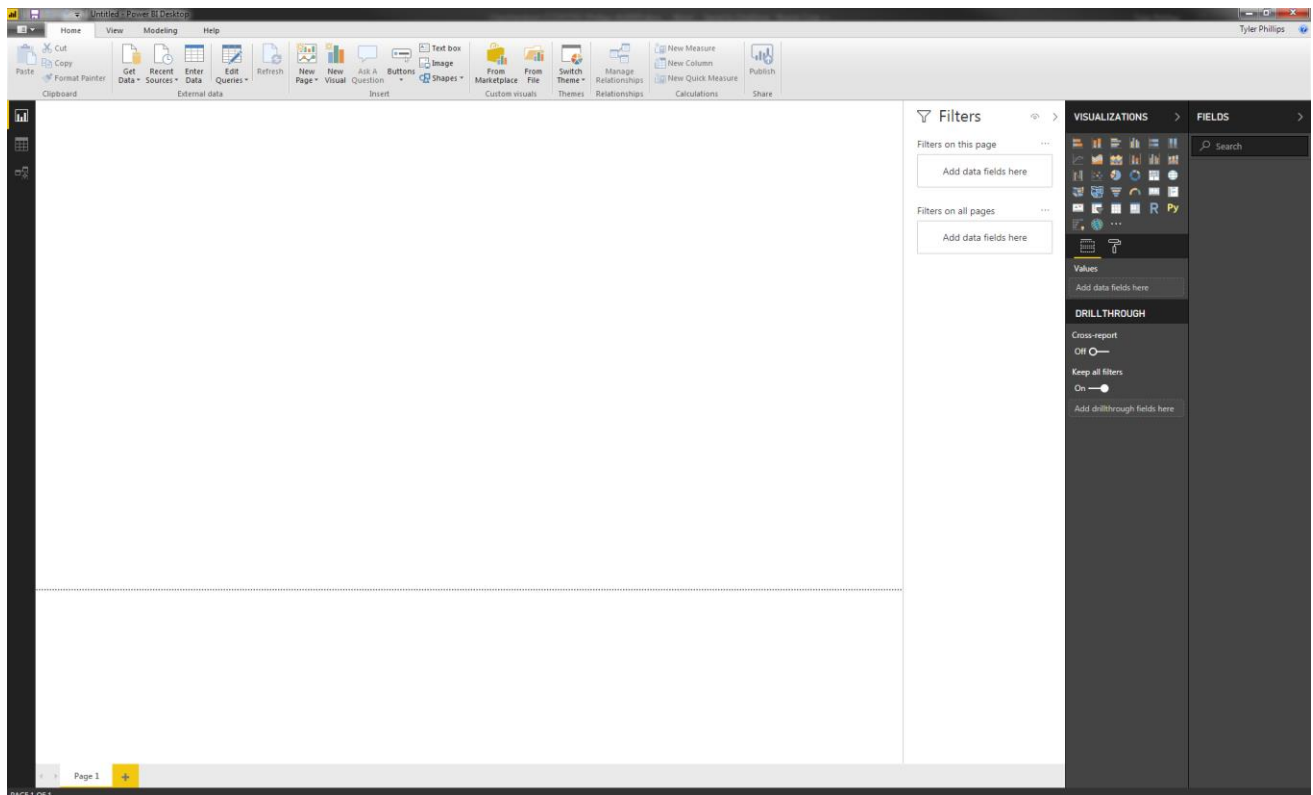
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Introduction to Power BI

Power BI is a data analysis tool that can report and collect information from multiple different data sources. It is simple and user friendly enough that business analysts and power users can work it and get benefits from it. On the other hand, it is a powerful multi-threaded data modeling software that can be used for complex mash up scenarios at the enterprise level.

Power BI: Core Components

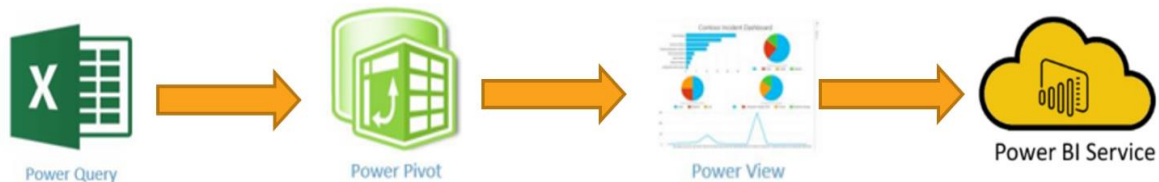
The Power BI package features 3 environments where data is analyzed. Power BI Desktop, Power BI Service, and Power BI Mobile. Power BI Desktop is the front and center program that is responsible for dashboard creation and data extraction. Power BI Service is the online portion of Power BI desktop where dashboards are uploaded and shared. Power BI Mobile is the namesake mobile version of your dashboard as a downloadable app. Layouts for mobile are created in Power BI Desktop. In summary, consider Power BI Service and Mobile as companions to Desktop program.



POWER BI DESKTOP.

The Power BI desktop environment is made up of 5 core components. These were originally released in Excel as the “Power Add-Ins”. All can be used individually but, when used together can achieve a robust and insightful data model that produces results. We will be focusing on 3 of these components (in bold) that deliver our fabrication content dashboard. These 3 along with the other two are in Power BI desktop. After our dashboard is created, we will upload it online to Power BI service which is an online companion to Power BI Desktop.

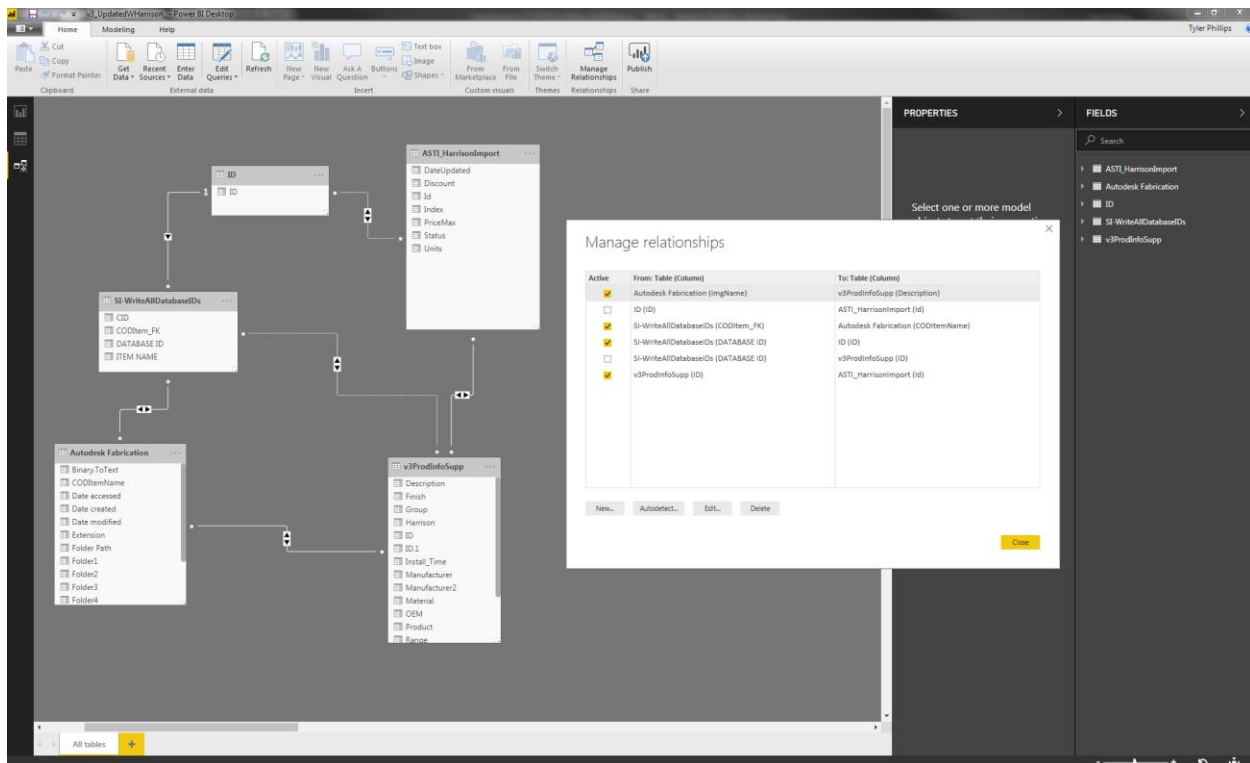
- **Power Query: Data mash up and transformation tool.**
 - **Power Pivot: Data modeling tool where relationships are stored.**
 - **Power View: Data visualization tool.**
 - Power Map: 3D geospatial data visualization tool.
 - Power Q&A: Natural language question.
-
- *Power BI Service: Online module where dashboards can be uploaded, shared, and have refresh schedules set.*
 - *Power BI Mobile: Mobile version that is designed within Power BI desktop.*



POWER QUERY IN POWER BI DESKTOP.

Power Query is the data transformation module that is responsible for extracting, transforming, and loading data in what is called the ETL process. It is found in the “Get Data” portion of the ribbon in Power BI Desktop and Excel. The only difference between Power Query in both environments is that the Excel version is limited to roughly 40 data connectors. The Power BI Desktop version can connect to roughly 140 different data sources from the GUI. However, Power Query in Excel is still useful to preprocess smaller data mashups before being imported into Power BI Desktop.

- **Extract Data:** Read, Collect, and import data from one or multiple sources
- **Transform Data:** Transform data via M Language query functions like Duplicate, Split, Merge, Pivot and Calculate
- **Load Data:** Send transformations to Power Pivot (Data Model)

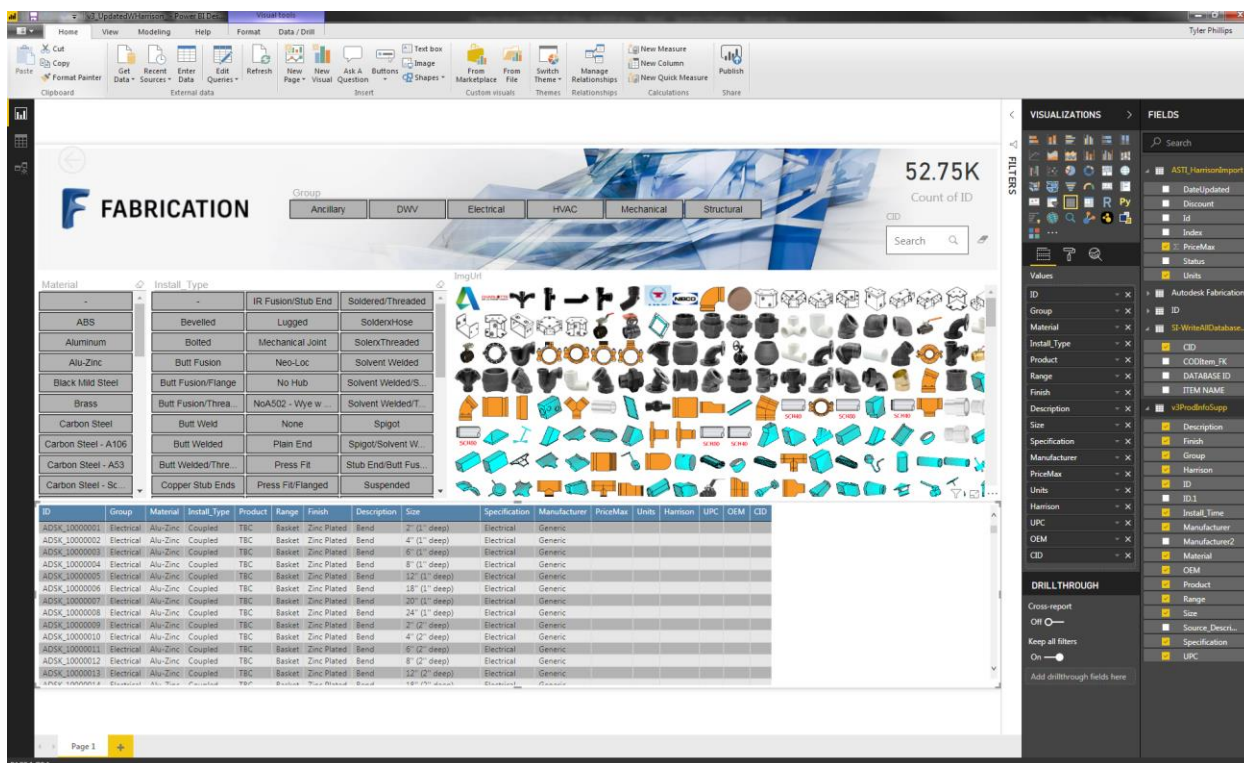


POWER PIVOT (DATA MODEL) IN POWER BI DESKTOP

Power Pivot

Power Pivot is the next step in our process where we begin to build relationships, schemas, and create calculated measures for KPI's and insights. This was originally introduced and is still visible as the Data Model in Excel. However, the Power BI desktop version is much more capable, and you will eliminate confusion by just sticking to using the Power BI version to model your data.

- **Analyze Data:** Map relationships between queries and tables
- **Calculate Data:** Group and summarize data based on relationships then generate measures and KPI's for insights.
- **Organize Data:** Generate filters for Parameters and what if scenarios for Power View Visuals

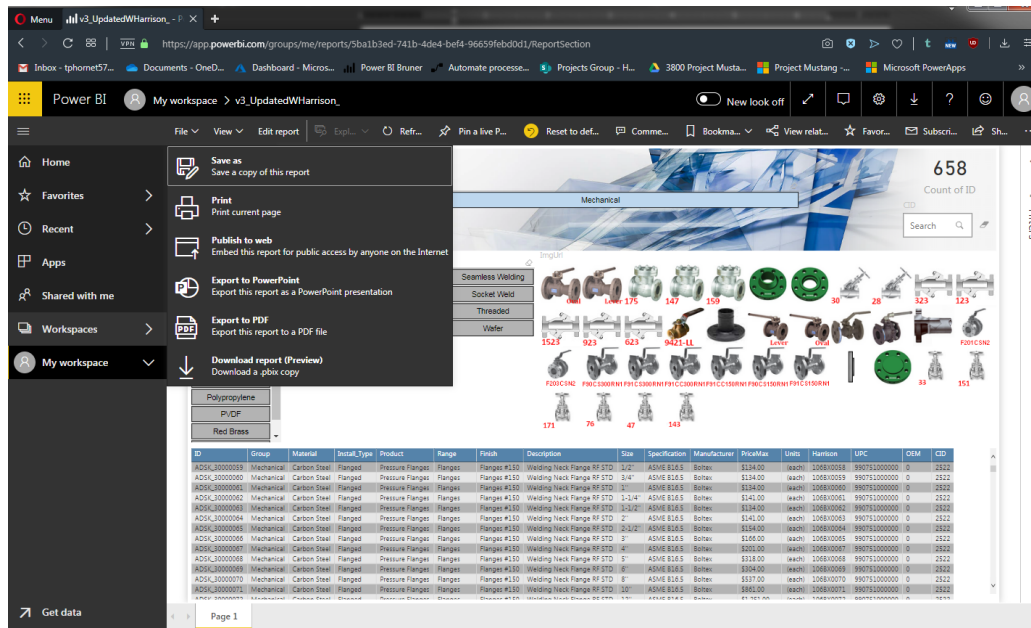


POWER VIEW (POWER BI DESKTOP MAIN PAGE)

Power View

Power View is the main module that handles the visualization aspect of our data. It is fully dynamic and when set up correctly is a game changer for data exploration. The process goes by selecting the visual, adding fields from our data to it, then formatting how it sorts that info to get us the most insight. In my opinion, this portion is the most impressive as it has over 200 custom visualizations to choose from along with full customization of backgrounds and themes.

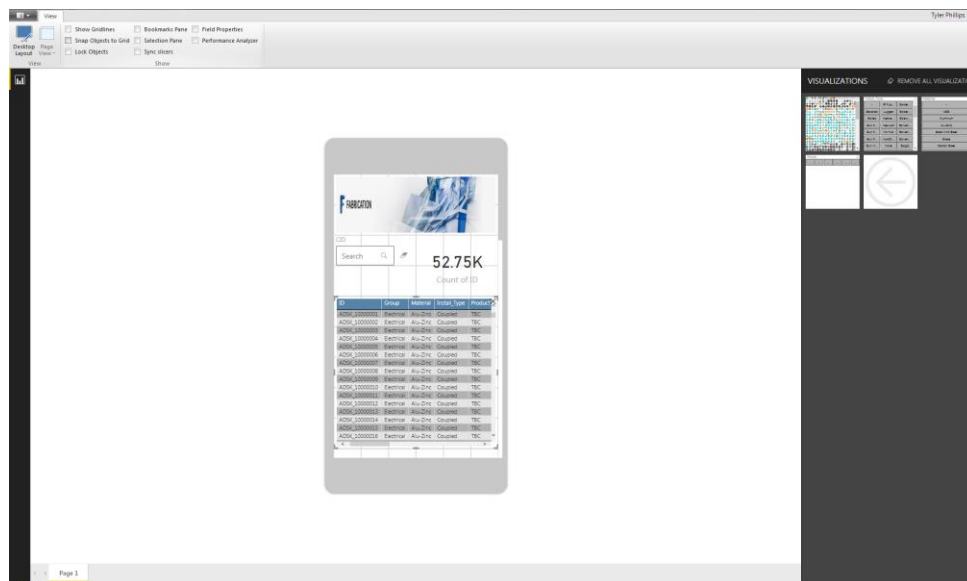
- **Visualize Data:** Process data model to determine best reflective visuals for our reports
- **Explore Data:** Navigate the model using report slicers and filters to find actionable insights
- **Understand & Distribute Data:** Develop efficient reports for repeated scenarios for sharing.



POWER BI SERVICE

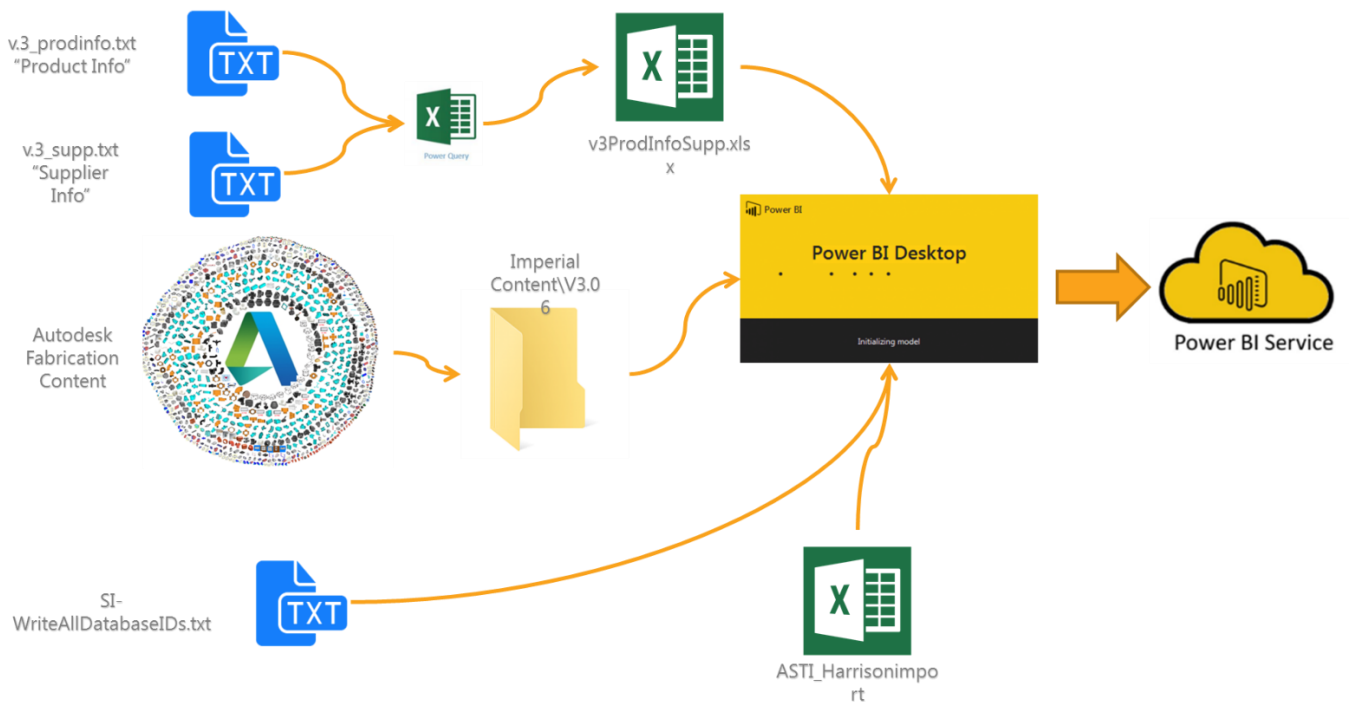
Power BI Service and Mobile

These additional modules are companions to Power BI desktop and offer additional solutions to help distribute information to your team. Power BI Service where we upload our dashboards, it is here that we administrate refresh schedules, generate web links, and QR codes for dashboards. Power BI mobile is a two-part module where layout design occurs in Power BI desktop and viewing is through the Power BI mobile app.



POWER BI MOBILE (LOCATED UNDER VIEW TAB IN POWER BI DESKTOP)

Fabrication Content Dashboard: Step by Step Guide



The Fabrication Content Dashboard is built up of 3 root data sources.

1. Production Information: Stored as product info and supplier info in the product information editor. The process is to copy and paste the info as two text files. We will combine these two files with Power Query in Excel to create a master product information table in Excel to be exported to Power Bi later.
2. The second source is our main database folder where we will be extracting the images associated with our .itm files to help us visualize our content.
3. The third is the result of Darren Young's library script. Specifically, the one that generates the Database ID's for each .itm in our content.

Step 1: Product Information Data

Create a "Master" table in Excel that combines both our Product and Supplier Info from the Product information editor. Using the Database Id as a link between the two files. The join type will be a left-outer type

- Open the product information editor, copy and paste the contents into your text editor and save as v.3_prodinfo.txt (you can name the file whatever you like on your own database)
- Repeat the above step with the supplier info portion

The screenshot displays a software interface with a table of product information and a file explorer window.

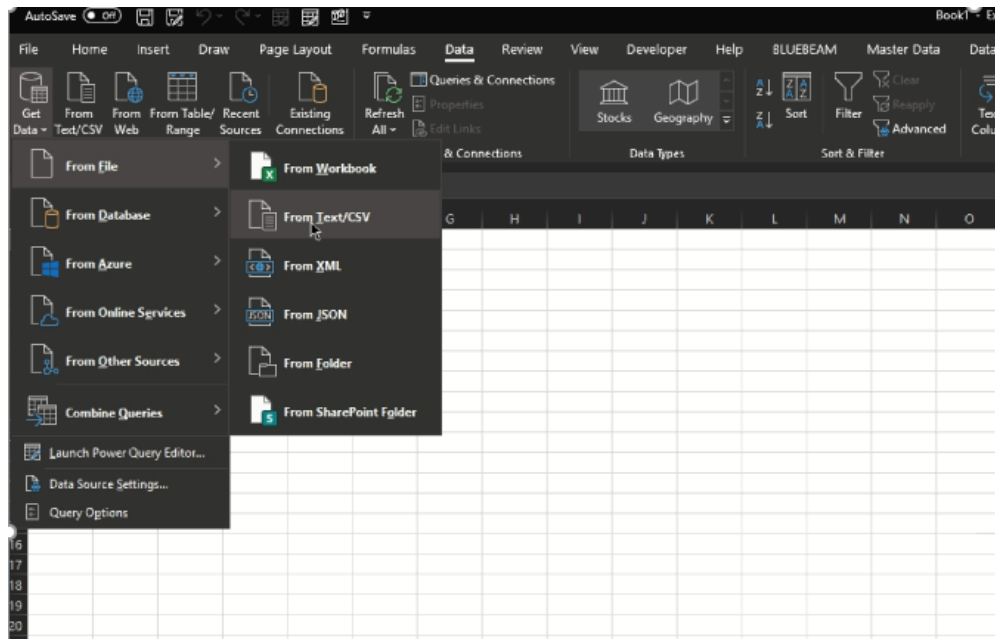
Table Columns: d, Group, Manufacturer, Product, Description, Size, Material, Specification, Install Type, Source.

Table Content (Sample Rows):

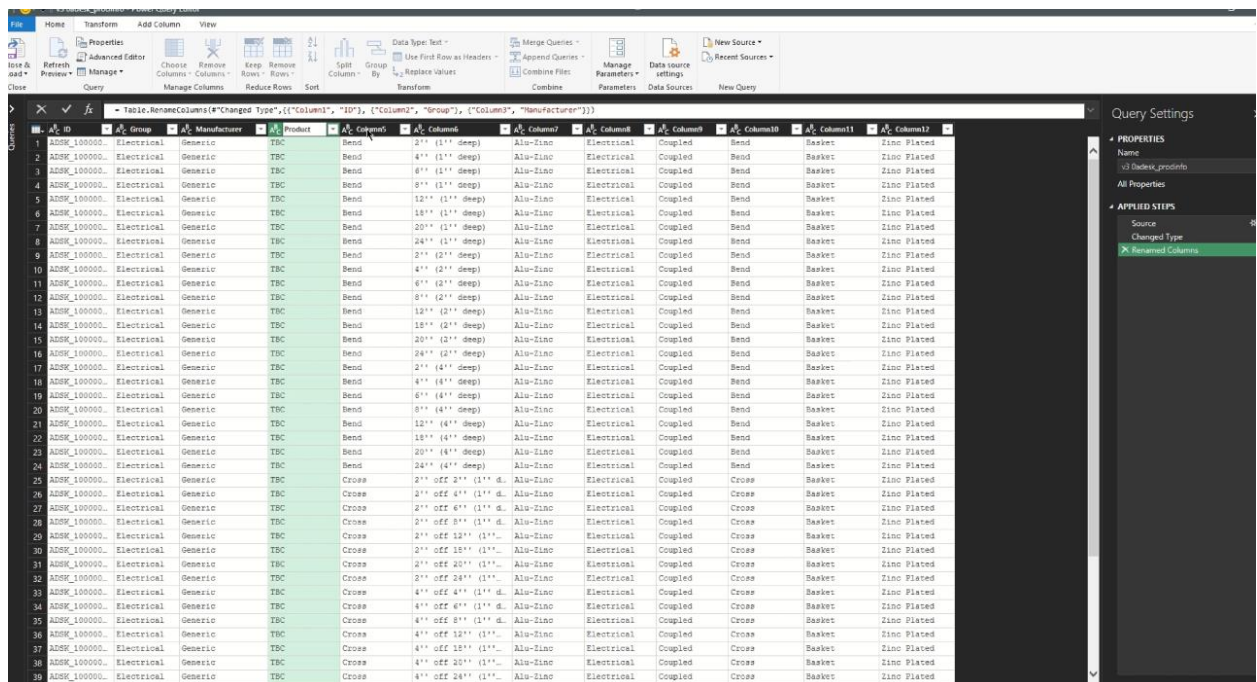
d	Group	Manufacturer	Product	Description	Size	Material	Specification	Install Type	Source
DSK-1000001	Electrical	Generic	TBC	Bond	2" (1" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000002	Electrical	Generic	TBC	Bond	4" (2" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000003	Electrical	Generic	TBC	Bond	8" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000004	Electrical	Generic	TBC	Bond	8" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000005	Electrical	Generic	TBC	Bond	12" (6" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000006	Electrical	Generic	TBC	Bond	18" (9" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000007	Electrical	Generic	TBC	Bond	20" (10" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000008	Electrical	Generic	TBC	Bond	24" (12" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000009	Electrical	Generic	TBC	Bond	2" (2" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000010	Electrical	Generic	TBC	Bond	4" (2" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000011	Electrical	Generic	TBC	Bond	8" (2" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000012	Electrical	Generic	TBC	Bond	8" (2" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000013	Electrical	Generic	TBC	Bond	12" (2" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000014	Electrical	Generic	TBC	Bond	18" (2" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000015	Electrical	Generic	TBC	Bond	20" (2" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000016	Electrical	Generic	TBC	Bond	24" (2" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000017	Electrical	Generic	TBC	Bond	2" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000018	Electrical	Generic	TBC	Bond	4" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000019	Electrical	Generic	TBC	Bond	8" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000020	Electrical	Generic	TBC	Bond	8" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000021	Electrical	Generic	TBC	Bond	12" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000022	Electrical	Generic	TBC	Bond	18" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000023	Electrical	Generic	TBC	Bond	20" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000024	Electrical	Generic	TBC	Bond	24" (4" deep)	Alu-Zinc	Electrical	Coupled	Bond
DSK-1000025	Electrical	Generic	TBC	Cross	2" off 2" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000026	Electrical	Generic	TBC	Cross	2" off 4" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000027	Electrical	Generic	TBC	Cross	2" off 6" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000028	Electrical	Generic	TBC	Cross	2" off 8" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000029	Electrical	Generic	TBC	Cross	2" off 12" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000030	Electrical	Generic	TBC	Cross	2" off 18" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000031	Electrical	Generic	TBC	Cross	2" off 20" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000032	Electrical	Generic	TBC	Cross	2" off 24" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000033	Electrical	Generic	TBC	Cross	4" off 4" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000034	Electrical	Generic	TBC	Cross	4" off 6" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000035	Electrical	Generic	TBC	Cross	4" off 8" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000036	Electrical	Generic	TBC	Cross	4" off 12" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000037	Electrical	Generic	TBC	Cross	4" off 18" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000038	Electrical	Generic	TBC	Cross	4" off 20" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000039	Electrical	Generic	TBC	Cross	4" off 24" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000040	Electrical	Generic	TBC	Cross	8" off 4" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000041	Electrical	Generic	TBC	Cross	8" off 6" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000042	Electrical	Generic	TBC	Cross	8" off 8" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000043	Electrical	Generic	TBC	Cross	8" off 12" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000044	Electrical	Generic	TBC	Cross	8" off 18" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000045	Electrical	Generic	TBC	Cross	8" off 20" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000046	Electrical	Generic	TBC	Cross	8" off 24" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000047	Electrical	Generic	TBC	Cross	8" off 12" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000048	Electrical	Generic	TBC	Cross	8" off 18" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000049	Electrical	Generic	TBC	Cross	8" off 20" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000050	Electrical	Generic	TBC	Cross	8" off 24" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000051	Electrical	Generic	TBC	Cross	12" off 12" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000052	Electrical	Generic	TBC	Cross	12" off 18" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000053	Electrical	Generic	TBC	Cross	12" off 20" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000054	Electrical	Generic	TBC	Cross	12" off 24" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross
DSK-1000055	Electrical	Generic	TBC	Cross	18" off 18" (1" deep)	Alu-Zinc	Electrical	Coupled	Cross

File Explorer Window: Shows a file named "v3_prodinfo.txt" in the "v3_prodinfo" folder. The file is a text file (Plain Text (*.txt*) - gtfignore).

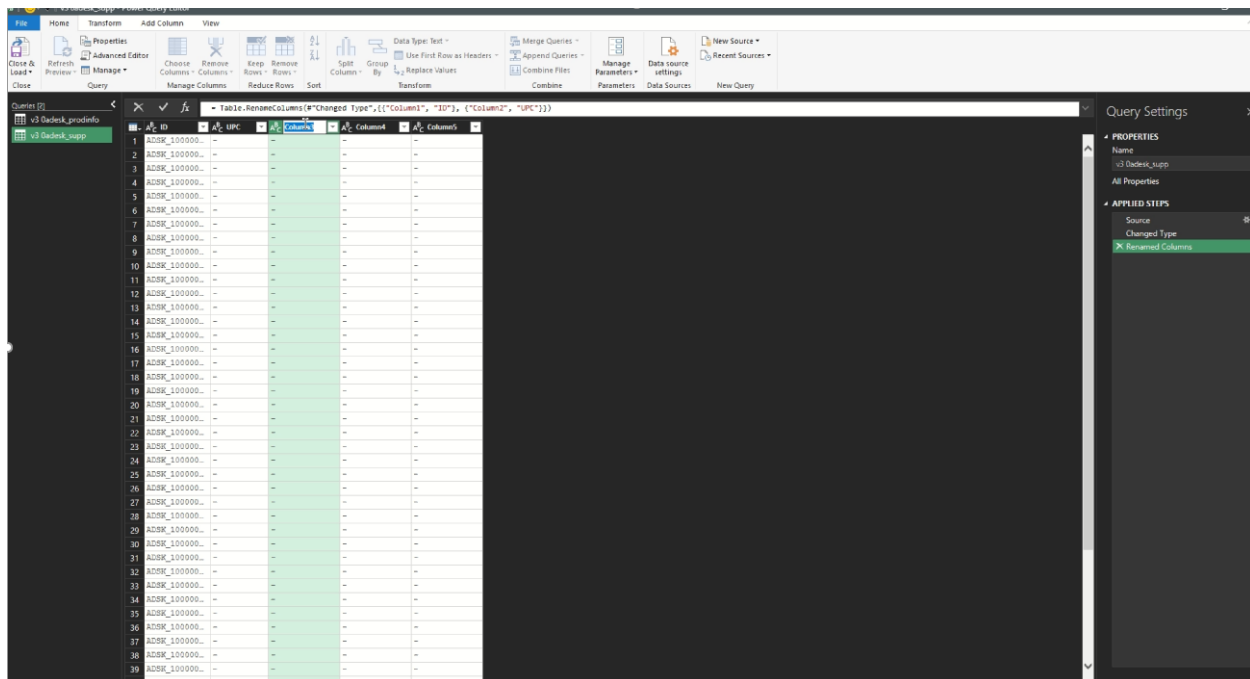
- Open an Excel Workbook and navigate to the Data tab on the ribbon. Click “Get Data” from Text/CSV



- Navigate to the first of the two .txt files we created and select import. This will open the Power Query module and import the data from the file.



- Repeat the same process and import the other .txt file. Your module should look like this.



- Go through and re-name the columns so they match the product information editor. This can be done by right clicking on a column heading and selecting “rename columns” or by left clicking the title and pressing F2.

- Navigate to the Merge Queries on the ribbon, select “Merge as New”. You will be prompted with a window where we will join the two files as one based on Database Id
- Hold down CTRL and select Both Id Columns. Then select the “Left Outer” join kind. It will then give us the number of matches which should be identical indicating that all rows match. Click OK.

Data Type: Text ▾
 Use First Row as Headers ▾
 Replace Values

Merge Queries ▾
 Append Queries ▾
 Combine Files

Manage Parameters ▾

Data source settings

New Source ▾
 Recent Sources ▾

Transform Combine Parameters Data Sources New Query

Column1", "ID"), {"Column2", "UPC"}, {"Column3", "Manufacturer2"}, {"Column4", "OEM"}, {"Column5", "Harrison"}))

v3 Oadesk_proinfo

ID	Group	Manufacturer	Product	Description	Size	Material	Specification	Ins
ADSK_10000001	Electrical	Generic	TBC	Bend	2" (1" deep)	Alu-Zinc	Electrical	Coc
ADSK_10000002	Electrical	Generic	TBC	Bend	4" (1" deep)	Alu-Zinc	Electrical	Coc
ADSK_10000003	Electrical	Generic	TBC	Bend	6" (1" deep)	Alu-Zinc	Electrical	Coc
ADSK_10000004	Electrical	Generic	TBC	Bend	8" (1" deep)	Alu-Zinc	Electrical	Coc
ADSK_10000005	Electrical	Generic	TBC	Bend	12" (1" deep)	Alu-Zinc	Electrical	Coc

v3 Oadesk_supp

ID	UPC	Manufacturer2	OEM	Harrison
ADSK_10000001	-	-	-	-
ADSK_10000002	-	-	-	-
ADSK_10000003	-	-	-	-
ADSK_10000004	-	-	-	-
ADSK_10000005	-	-	-	-

Join Kind
 Left Outer (all from first, matching from second) ▾

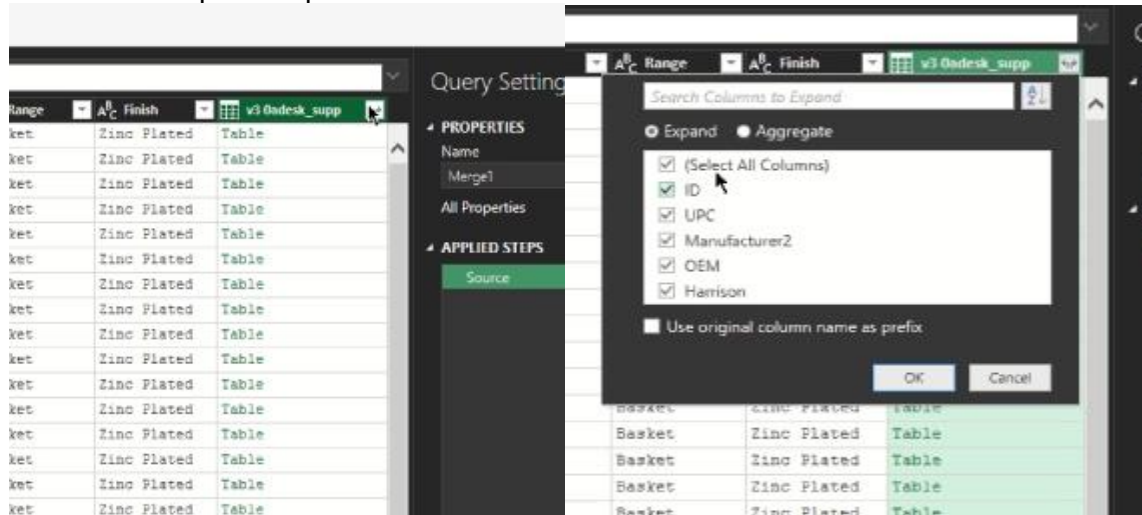
☐ Use fuzzy matching to perform the merge

Fuzzy merge options

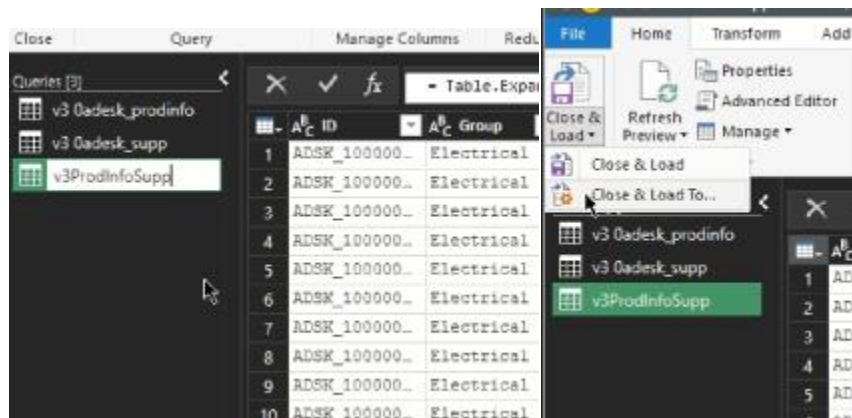
✓ The selection matches 52748 of 52748 rows from the first table.

OK Cancel

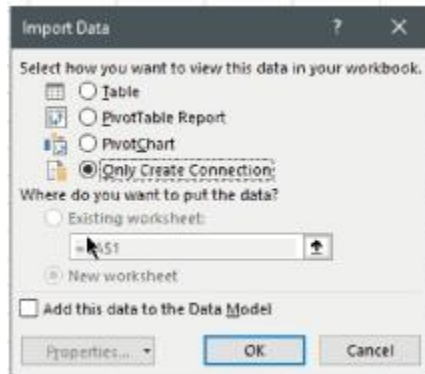
- Power Query now gives us a merged table. Navigate to the far right column and click the expand button. Make sure all columns are selected and uncheck the “use original column as prefix” option. Click OK.



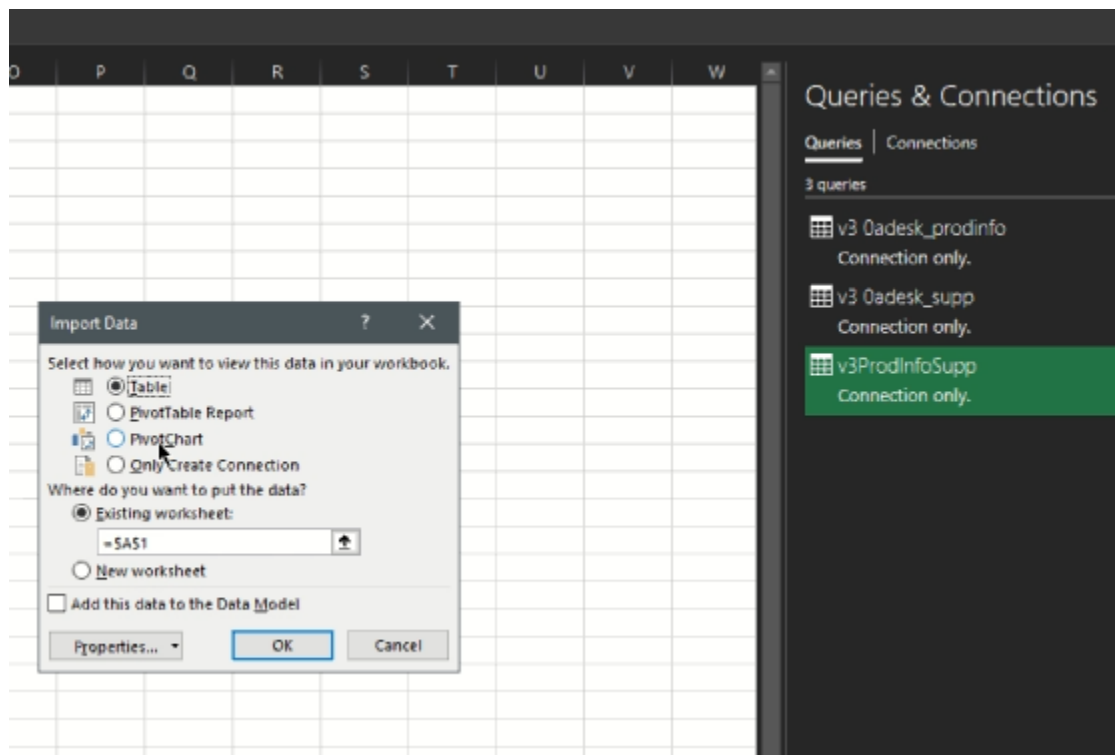
- Navigate to the left side under queries and re-name the table as v3ProdInfoSupp (or whichever you like). This will be the name of the table when we import it into Power Bi desktop.
- Select the “Close & Load” dropdown and click the option with the orange gear titled “Close and Load To”. This creates a connection and allows us to decide which tables will populate in the workbook. The other option with the floppy disk option loads all of our queries as tables and can slow down performance. It’s good practice to seldom use this option.



- The Power Query module will now close and prompt us with the “Import Data” window. Select “Only Create Connection” and uncheck the “Add to the Data Model” box. Click OK

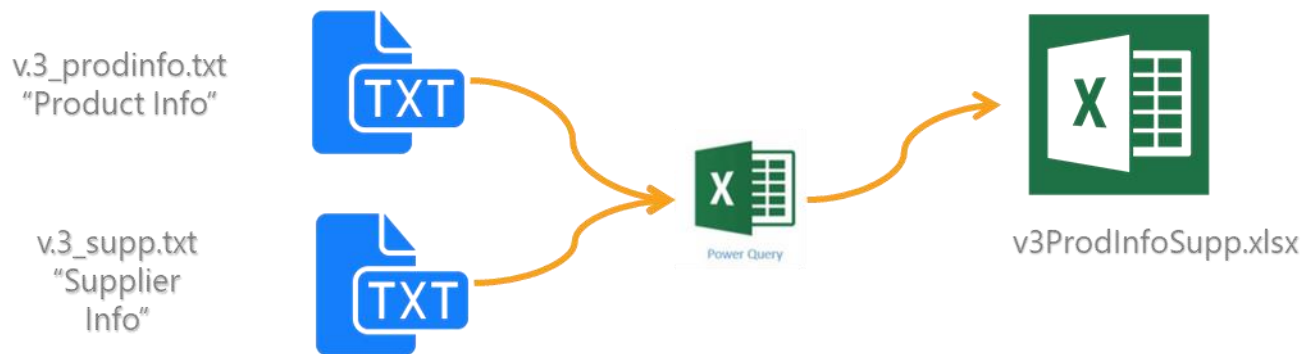


- Now the “Queries and Connections” Pane will open to the right. Right click on our merged table “v3ProdInfoSupp” and select “Load to”. This will bring our Import Data window up again. This time we will select the “Table” option and check the “Existing Worksheet” bubble. Click OK.



- Our table will now populate to the workbook and will be saved as an object. This will automatically update and adjust for additional rows and columns each time we save the text files from our Product Information Editor. This step is now completed after we save the workbook.

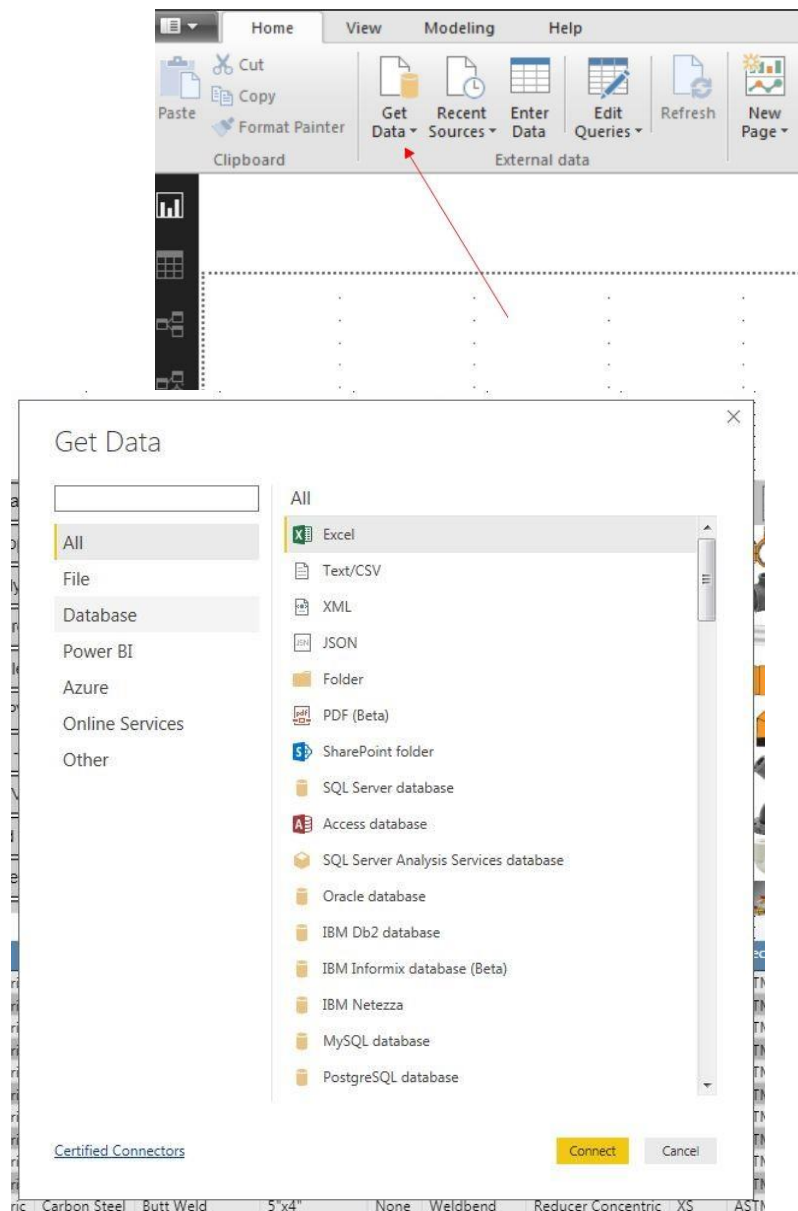
ID	Category	Manufacturer	Product	Description	Size	Material	Specification
ADSK_10000001	Electrical	Generic	TBC	Bend	2" (1" deep)	Alu-Zinc	Electrical
ADSK_10000002	Electrical	Generic	TBC	Bend	4" (1" deep)	Alu-Zinc	Electrical
ADSK_10000003	Electrical	Generic	TBC	Bend	6" (1" deep)	Alu-Zinc	Electrical
ADSK_10000004	Electrical	Generic	TBC	Bend	8" (1" deep)	Alu-Zinc	Electrical
ADSK_10000005	Electrical	Generic	TBC	Bend	12" (1" deep)	Alu-Zinc	Electrical
ADSK_10000006	Electrical	Generic	TBC	Bend	18" (1" deep)	Alu-Zinc	Electrical
ADSK_10000007	Electrical	Generic	TBC	Bend	20" (1" deep)	Alu-Zinc	Electrical
ADSK_10000008	Electrical	Generic	TBC	Bend	24" (1" deep)	Alu-Zinc	Electrical
ADSK_10000009	Electrical	Generic	TBC	Bend	2" (2" deep)	Alu-Zinc	Electrical
ADSK_10000010	Electrical	Generic	TBC	Bend	4" (2" deep)	Alu-Zinc	Electrical
ADSK_10000011	Electrical	Generic	TBC	Bend	6" (2" deep)	Alu-Zinc	Electrical
ADSK_10000012	Electrical	Generic	TBC	Bend	8" (2" deep)	Alu-Zinc	Electrical
ADSK_10000013	Electrical	Generic	TBC	Bend	12" (2" deep)	Alu-Zinc	Electrical
ADSK_10000014	Electrical	Generic	TBC	Bend	18" (2" deep)	Alu-Zinc	Electrical
ADSK_10000015	Electrical	Generic	TBC	Bend	20" (2" deep)	Alu-Zinc	Electrical
ADSK_10000016	Electrical	Generic	TBC	Bend	24" (2" deep)	Alu-Zinc	Electrical
ADSK_10000017	Electrical	Generic	TBC	Bend	2" (4" deep)	Alu-Zinc	Electrical
ADSK_10000018	Electrical	Generic	TBC	Bend	4" (4" deep)	Alu-Zinc	Electrical
ADSK_10000019	Electrical	Generic	TBC	Bend	6" (4" deep)	Alu-Zinc	Electrical
ADSK_10000020	Electrical	Generic	TBC	Bend	8" (4" deep)	Alu-Zinc	Electrical
ADSK_10000021	Electrical	Generic	TBC	Bend	12" (4" deep)	Alu-Zinc	Electrical
ADSK_10000022	Electrical	Generic	TBC	Bend	18" (4" deep)	Alu-Zinc	Electrical
ADSK_10000023	Electrical	Generic	TBC	Bend	20" (4" deep)	Alu-Zinc	Electrical
ADSK_10000024	Electrical	Generic	TBC	Bend	24" (4" deep)	Alu-Zinc	Electrical
ADSK_10000025	Electrical	Generic	TBC	Cross	2" off 2" (1" deep)	Alu-Zinc	Electrical
ADSK_10000026	Electrical	Generic	TBC	Cross	2" off 4" (1" deep)	Alu-Zinc	Electrical
ADSK_10000027	Electrical	Generic	TBC	Cross	2" off 6" (1" deep)	Alu-Zinc	Electrical
ADSK_10000028	Electrical	Generic	TBC	Cross	2" off 8" (1" deep)	Alu-Zinc	Electrical
ADSK_10000029	Electrical	Generic	TBC	Cross	2" off 12" (1" deep)	Alu-Zinc	Electrical
ADSK_10000030	Electrical	Generic	TBC	Cross	2" off 18" (1" deep)	Alu-Zinc	Electrical
ADSK_10000031	Electrical	Generic	TBC	Cross	2" off 20" (1" deep)	Alu-Zinc	Electrical
ADSK_10000032	Electrical	Generic	TBC	Cross	2" off 24" (1" deep)	Alu-Zinc	Electrical
ADSK_10000033	Electrical	Generic	TBC	Cross	4" off 4" (1" deep)	Alu-Zinc	Electrical
ADSK_10000034	Electrical	Generic	TBC	Cross	4" off 6" (1" deep)	Alu-Zinc	Electrical
ADSK_10000035	Electrical	Generic	TBC	Cross	4" off 8" (1" deep)	Alu-Zinc	Electrical
ADSK_10000036	Electrical	Generic	TBC	Cross	4" off 12" (1" deep)	Alu-Zinc	Electrical
ADSK_10000037	Electrical	Generic	TBC	Cross	4" off 18" (1" deep)	Alu-Zinc	Electrical
ADSK_10000038	Electrical	Generic	TBC	Cross	4" off 20" (1" deep)	Alu-Zinc	Electrical



Step 2: Import images from our Database folder in Power BI Desktop

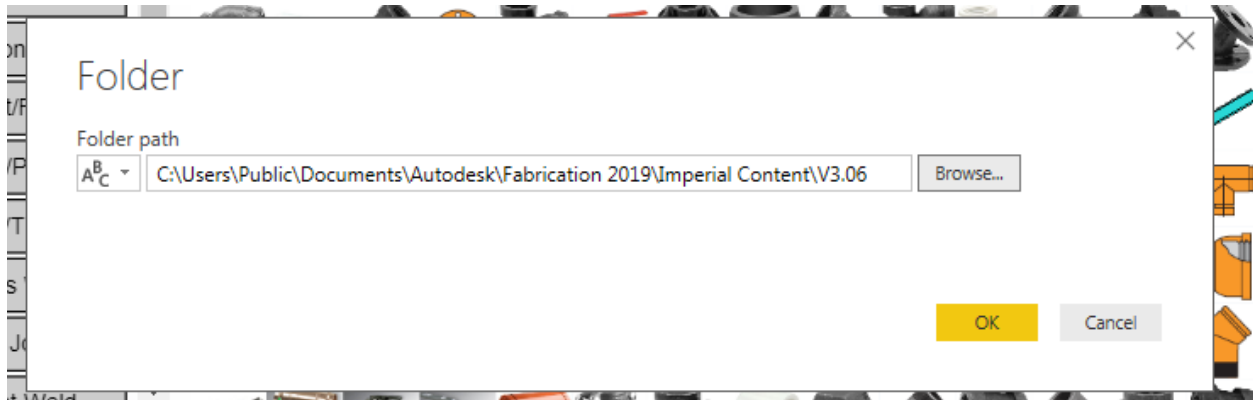
In this step we will be working in Power BI desktop to extract data from our Fabrication Database folder. Because each .itm has an image associated with it using the name, we can build the relationships to our other data sets. The images will be converted from binary to jpegs, then url's with the M Language to give us our tiles at the end that we can sort our data with.

- Open Power BI desktop and navigate to the “Get Data” drop down in the ribbon. You will be prompted with all the data sources that the Power BI can connect to. Select the Folder option and click connect.

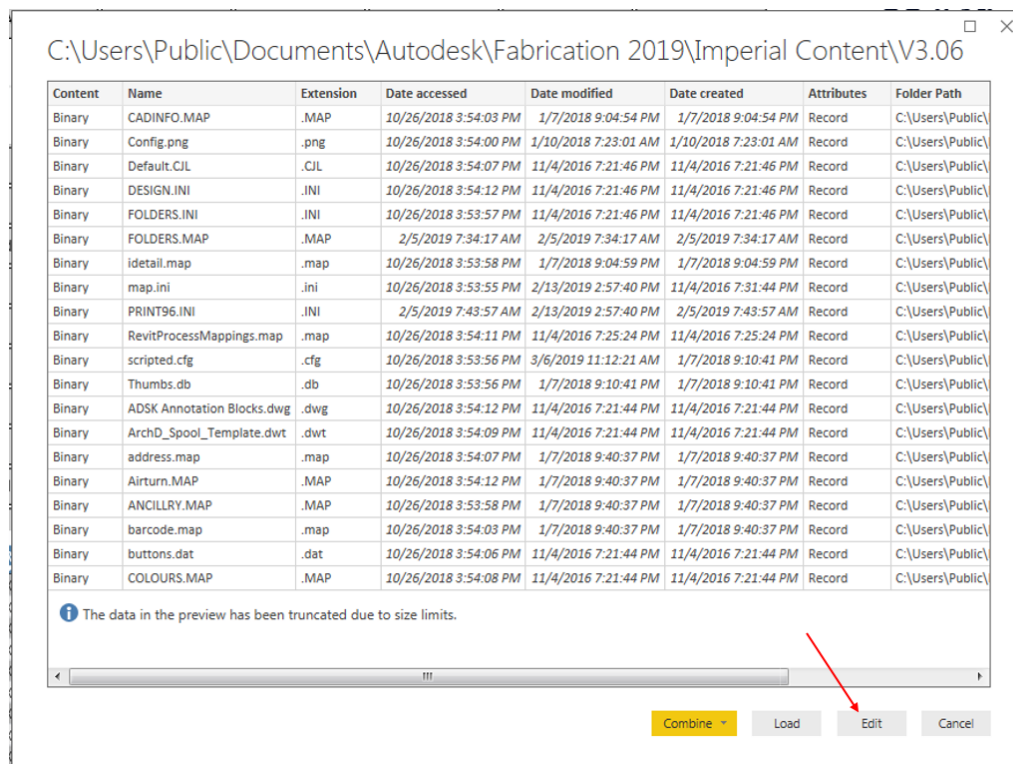


- Enter or browse to the path to your "Autodesk Fabrication" folder with your database and items in your system files. For this example, we are going to use the default imperial database that comes with the software which is usually located here:

"C:\Users\Public\Documents\Autodesk\Fabrication 2019\Imperial Content\V3.06".
Then click OK.



- Next you will be prompted with the data load window asking if you want to edit the content with 4 selections in the bottom right. Select "Edit" since we will be using the folder for images that need conversion.



- After you click "edit" Power BI desktop opens its version of Power Query module. It has the same look as Power Query in Excel. However, the Power BI desktop version is more robust and has additional features that we will become apparent as we continue through the guide. We now have a list of every file in the selected folder populated in the module.

	Name	Extension	Date accessed	Date modified	Date created	Attributes
1	CADINFO.MAP	.MAP	12/11/2018 8:53:54 PM	1/7/2016 9:04:54 PM	1/7/2016 9:04:54 PM	Record
2	Binary		12/11/2018 8:53:45 PM	1/10/2016 7:23:01 AM	1/10/2016 7:23:01 AM	Record
3	Default.CTL	.CTL	12/11/2018 8:54:03 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
4	DESIGN.INI	.INI	12/11/2018 8:54:18 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
5	BINARY		12/11/2018 8:53:59 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
6	POLYDATA.MAP	.MAP	2/1/2019 6:32:21 PM	2/1/2019 6:32:21 PM	2/1/2019 6:32:21 PM	Record
7	Detail.MAP	.MAP	12/11/2018 8:53:42 PM	1/7/2016 9:04:59 PM	1/7/2016 9:04:59 PM	Record
8	map.ini	.ini	12/11/2018 8:53:35 PM	2/1/2019 6:32:39 PM	11/4/2016 7:21:44 PM	Record
9	PRINT96.INI	.INI	2/1/2019 6:32:39 PM	2/1/2019 6:32:39 PM	2/1/2019 6:32:39 PM	Record
10	RevisProcessHappings...	.map	12/11/2018 8:54:12 PM	11/4/2016 7:25:24 PM	11/4/2016 7:25:24 PM	Record
11	scripted.ofg	.ofg	12/11/2018 8:53:36 PM	1/7/2016 9:10:41 PM	1/7/2016 9:10:41 PM	Record
12	Thumbs.db	.db	12/11/2018 8:53:57 PM	1/7/2016 9:10:41 PM	1/7/2016 9:10:41 PM	Record
13	ACWP Annotation Bloc...	.map	12/11/2018 8:54:13 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
14	ArchD_Spool_Template...	.dwt	12/11/2018 8:54:07 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
15	address.map	.map	12/11/2018 8:54:03 PM	1/7/2016 9:40:37 PM	1/7/2016 9:40:37 PM	Record
16	Airturn.MAP	.MAP	12/11/2018 8:54:13 PM	1/7/2016 9:40:37 PM	1/7/2016 9:40:37 PM	Record
17	ARCILLARY.MAP	.MAP	12/11/2018 8:53:42 PM	1/7/2016 9:40:37 PM	1/7/2016 9:40:37 PM	Record
18	barcode.map	.map	12/11/2018 8:53:53 PM	1/7/2016 9:40:37 PM	1/7/2016 9:40:37 PM	Record
19	buttons.dat	.dat	12/11/2018 8:54:01 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
20	COLORS.MAP	.MAP	12/11/2018 8:54:06 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
21	Connects.map	.map	12/11/2018 8:54:12 PM	1/7/2016 9:40:37 PM	1/7/2016 9:40:37 PM	Record
22	Cost.MAP	.MAP	12/11/2018 8:53:32 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
23	Coutouts.MAP	.MAP	12/11/2018 8:54:06 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
24	DAMPER.MAP	.MAP	12/11/2018 8:53:49 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
25	Diameters.MAP	.MAP	12/11/2018 8:54:06 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
26	Shops.map	.map	12/11/2018 8:54:03 PM	1/7/2016 9:40:36 PM	1/7/2016 9:40:36 PM	Record
27	ESTIMATE.INI	.INI	12/11/2018 8:53:48 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
28	ETimes.MAP	.MAP	12/11/2018 8:53:56 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
29	FACINGS.MAP	.MAP	12/11/2018 8:53:53 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
30	Flames.MAP	.MAP	12/11/2018 8:54:01 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
31	HSpece.MAP	.MAP	12/11/2018 8:53:37 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
32	IMPORT.RUV	.RUV	12/11/2018 8:53:48 PM	11/4/2016 7:39:48 PM	11/4/2016 7:39:48 PM	Record
33	ITSpecs.MAP	.MAP	12/11/2018 8:54:06 PM	1/7/2016 9:40:37 PM	1/7/2016 9:40:37 PM	Record
34	Layers.MAP	.MAP	12/11/2018 8:54:00 PM	1/7/2016 9:40:37 PM	1/7/2016 9:40:37 PM	Record
35	LEADS.MAP	.MAP	12/11/2018 8:53:59 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
36	Material.MAP	.MAP	12/11/2018 8:53:36 PM	1/7/2016 9:40:36 PM	1/7/2016 9:40:36 PM	Record
37	MCGROUPS.MAP	.MAP	12/11/2018 8:54:12 PM	11/4/2016 7:21:44 PM	11/4/2016 7:21:44 PM	Record
38	NESTING.MAP	.MAP	12/11/2018 8:53:48 PM	1/7/2016 9:40:36 PM	1/7/2016 9:40:36 PM	Record

- The next step is to convert our "Content" column from binary to text. We will add a custom column with an M Language formula to convert the information. To do this, navigate to the "Add column" tab and select "Custom Column". The window that appears is where we will enter the formula and name the column.

Custom Column

Add a column that is computed from the other columns.

New column name:

Custom column formula:

Available columns:

- Content
- Name
- Extension
- Date accessed
- Date modified
- Date created
- Attributes

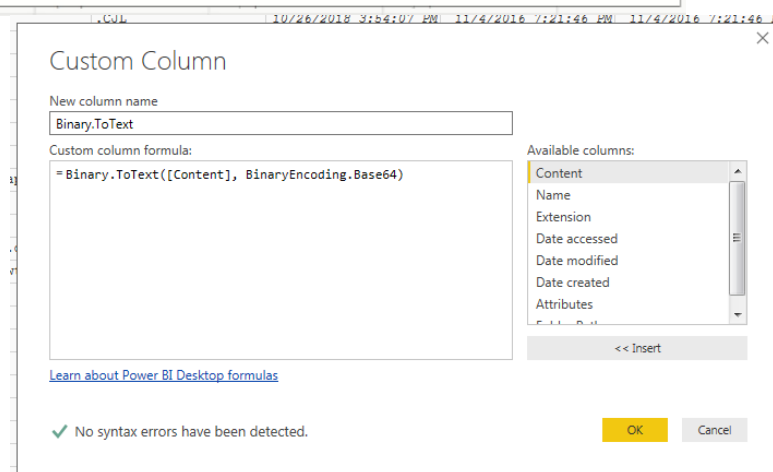
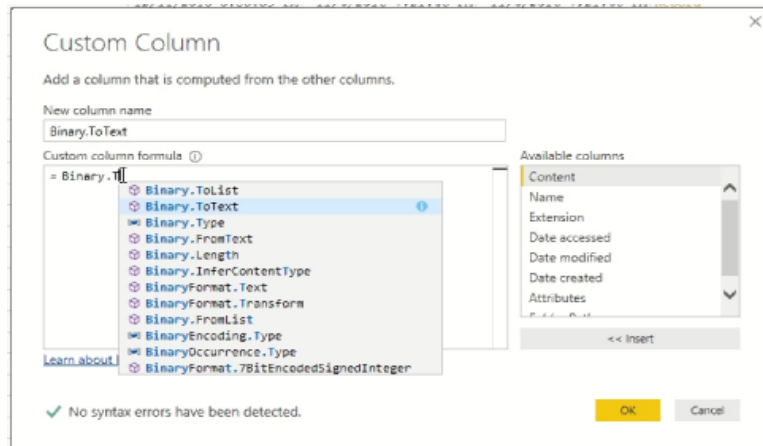
[Learn about Power BI Desktop formulas](#)

The formula is incomplete.

OK Cancel

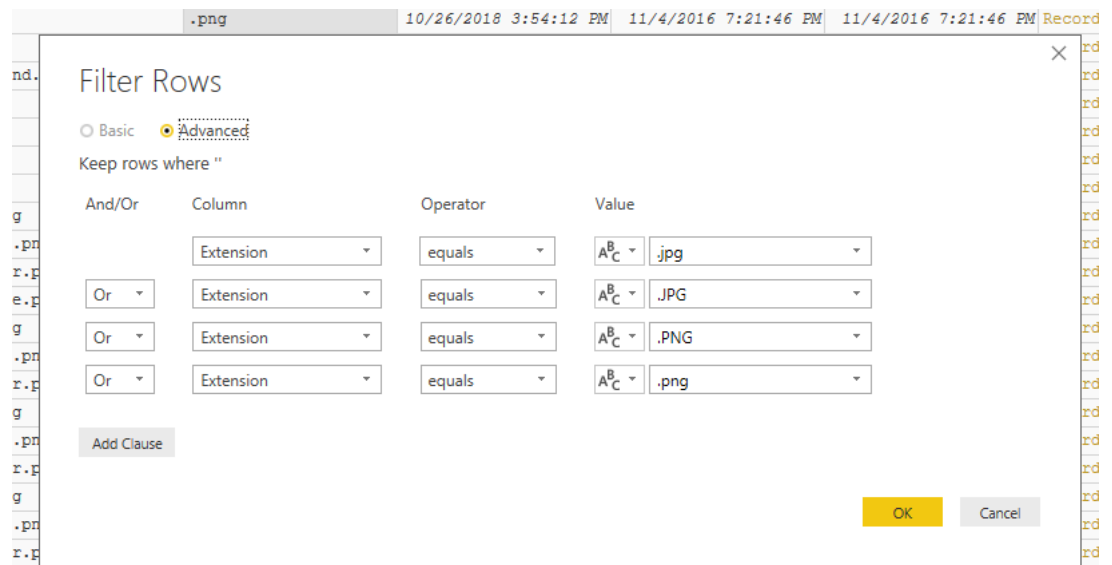
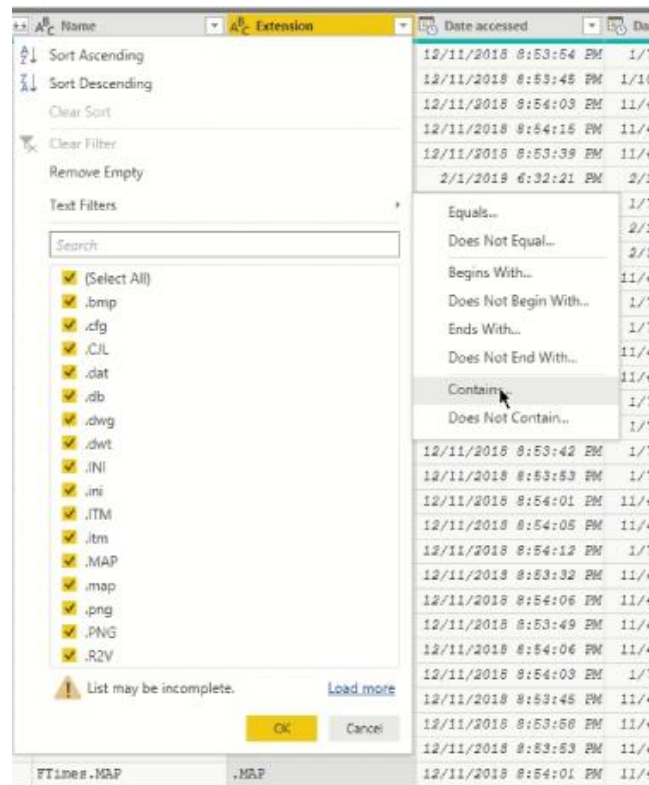
- The window is comprised of 3 portions. Column Name, Column Formula, and available columns. When we enter our M Language formula, we will receive hints from a feature called intellisense. This makes the formula writing process much more intuitive than having to remember the specific rules. The syntax is broken down into 3 parts.
- Binary.ToText(**binary** as nullable binary, optional **encoding** as nullable number) as nullable text

- `Binary.ToText ([Content], BinaryEncoding.Base64)`
- *Binary.ToText* : Function that calls Binary content
- *[Content]*: Our content column
- *BinaryEncoding.Base64*: Converts to text and encodes it in Base64 format

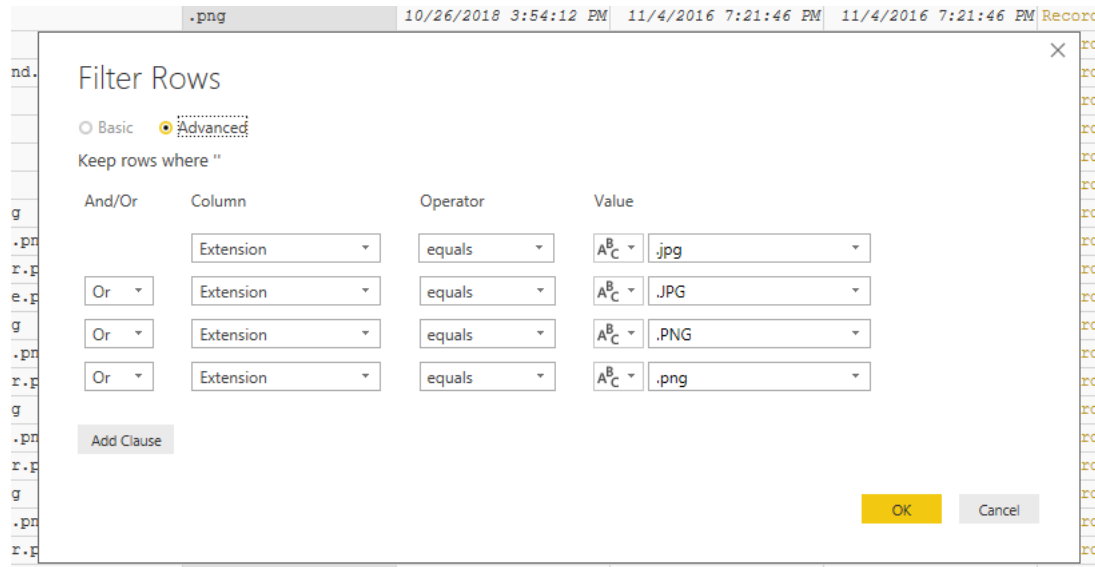


- After entering the M Language formula. Click OK

- We only need this set for the image files, so we need to filter out the other file types and keep the PNG's and JPG's. We can filter for these files by navigating to the "Extension" column. Then opening the Text filters dropdown to select the "Contains" operator. This will bring up the "Filter Rows" window.



- In this window select the “Advanced” button. In the Column dropdowns, select “Extension”. Then select “Equals” in the operator fields. Next, we fill in all the file extensions that will be kept. This process is essentially a GUI version of an “IF” statement from Excel. Click OK.

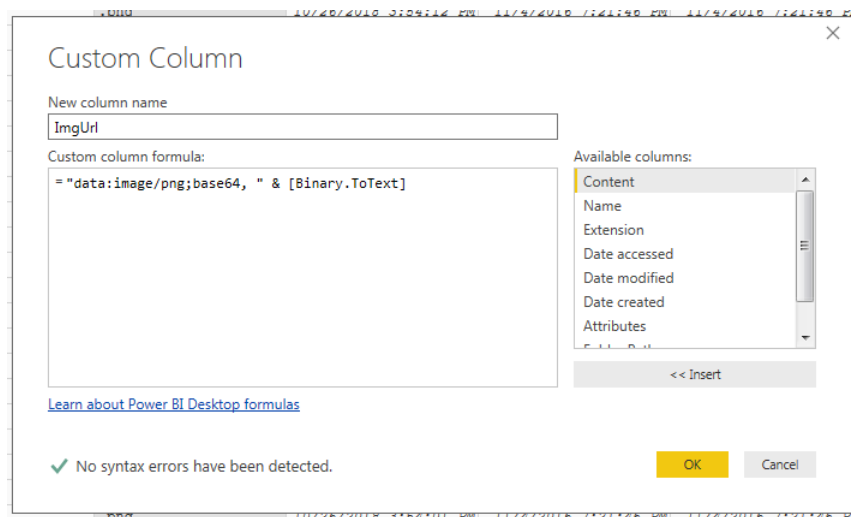


- Next, we repeat the custom column process adding a column with text values that will be appended onto the Binary.ToText column. This will finalize our binary to text conversion into a readable value for the visual to use on the dashboard.

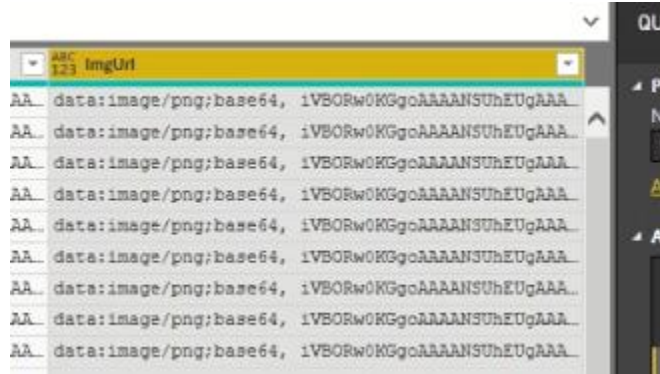
= "data:image/png;base64, " & [Binary.ToText]

Text to be added^

Column to append to ^



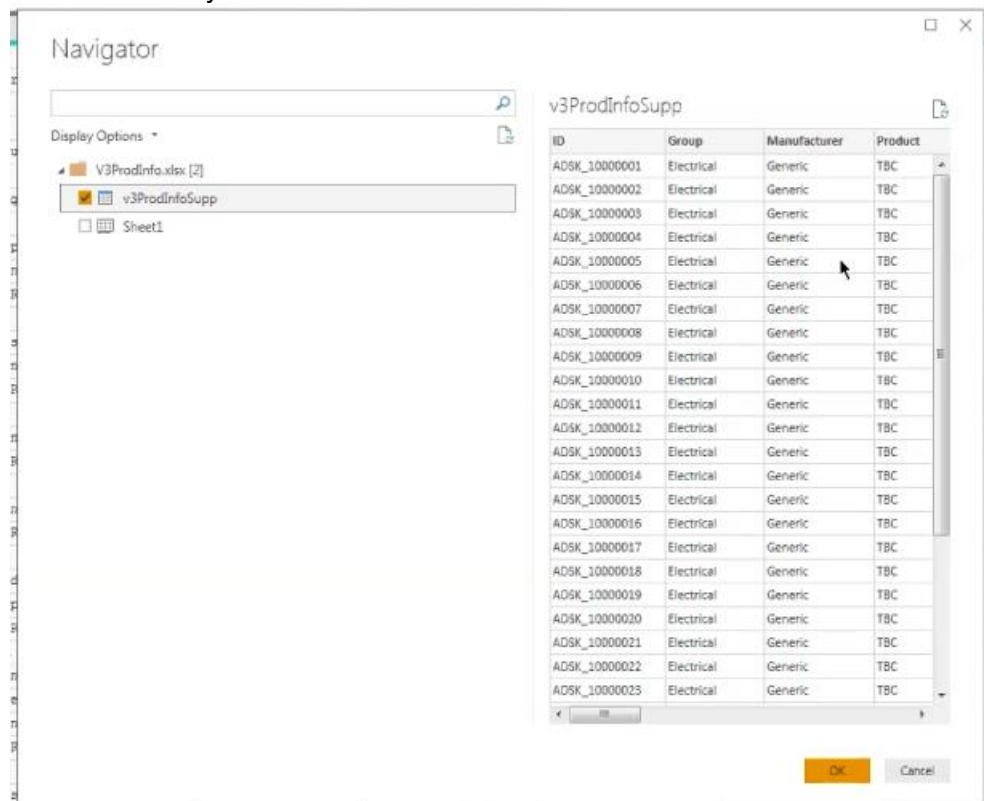
- Once this is completed you should have a column that looks like this:



Step 3: Import Product Information and COD Script Data

In this step we will import the table “v3ProdInfoSupp” from our Excel file we created in step one along with the .txt file that is created when you run the COD script in Fabrication. Ours is called “SI-WriteAllDatabaseIDs.txt”

- To import our Excel file. Navigate to the “New Source” ribbon and select Excel. Navigate to where you saved the Excel file and select, then click open. You will be prompted with the Navigator window. Notice how it shows our table “v3ProdInfoSupp” and the sheet. This means our table is recognized as a separate object and Power Query will adjust for extra columns and rows automatically. Select this table and click “OK”.



- Now that we have our Product Information, we will repeat the step and import our “SI-WriteAllDatabaseIDs.txt” File. Select, “New source” and Click “OK” in the Preview pane.

SI-WriteAllDatabaseIDs.TXT

File Origin: 1252: Western European (Windows) | Delimiter: Comma | Data Type Detection: Based on first 200 rows

Column1	Column2	Column3
CID	ITEM NAME	DATABASE ID
838	/Imperial Content/Electrical/Generic/Hangers/Rectang...	ADSK_10005732
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000001
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000002
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000003
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000004
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000005
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000006
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000007
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000008
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000009
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000010
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000011
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000012
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000013
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000014
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000015
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000016
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000017
878	/Imperial Content/Electrical/Generic/Systems/Basket/B...	ADSK_10000018

The data in the preview has been truncated due to size limits.

OK Cancel

- Next, we need to promote our first row to headers. To do this, we navigate to the “Transform” tab and select “Use First Row as Headers”

Home Transform Add Column View Help

Group By | Transpose | Data Type: Text | Replace Values | Unpivot Columns | Sp Colu

Use First Row as Headers | Reverse Rows | Detect Data Type | Fill | Move | Convert to List

Use First Row as Headers (selected)

Use Headers as First Row

Queries [3]

- Autodesk Fabrication
- v3ProdInfoSupp
- SI-WriteAllDatabaseIDs

fx = Csv.Document(File.Contents("C:\Use

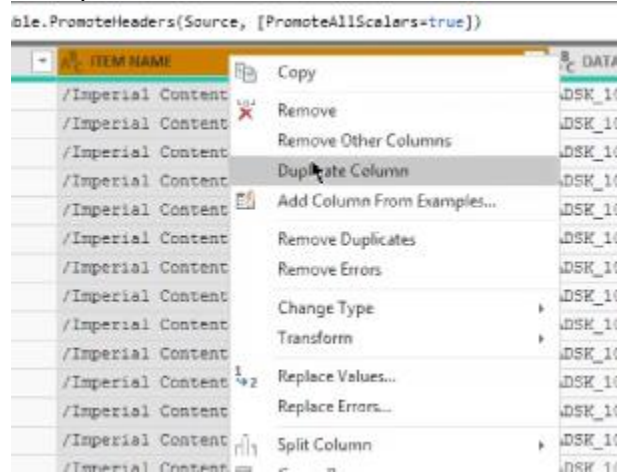
	Column1	Column2
1	CID	ITEM NAME
2	838	/Imperial Content/Electri
3	878	/Imperial Content/Electri
4	878	/Imperial Content/Electri
5	878	/Imperial Content/Electri
6	878	/Imperial Content/Electri
7	878	/Imperial Content/Electri
8	878	/Imperial Content/Electri
9	878	/Imperial Content/Electri

- Once completed we should have 3 queries populated in the left panel. In the next step we will be modifying these queries to build relationships between them.

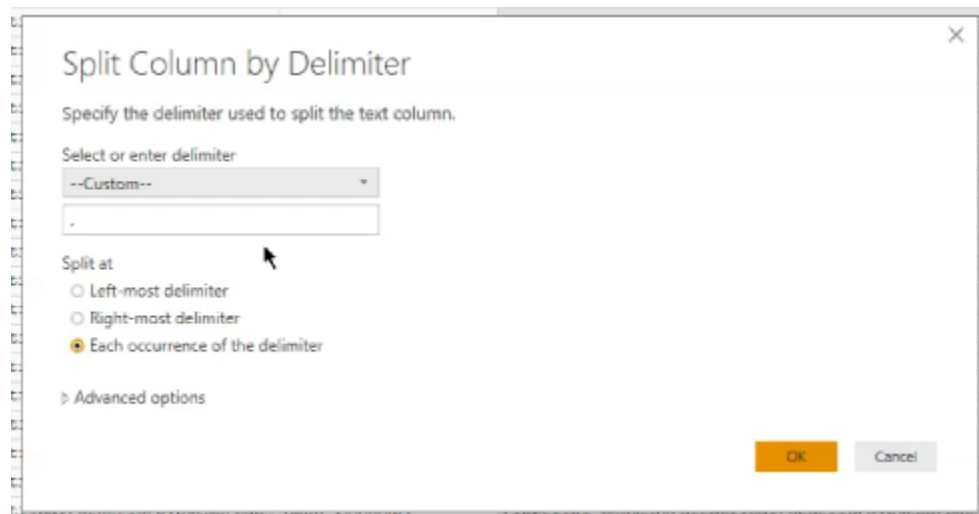
Step 4: Create a Foreign Key in our SI-WriteAllDatabaseID's table

In this step we will be using the "Item Name" Column in our SI-WriteAllDatabaseID's table. This will be modified to create a foreign key that will be used as a link between our Images in the database along with our product information. We will do this by removing the ".itm" extension at the end of the column using a combination of functions.

- From the Power Query Module select the "SI-WriteAllDatabaseIDs" query. Right click and duplicate the "Item Name" column.



- Navigate to the newly created column "ITEM NAME - Copy", right click and select "Split Column by Delimiter". You will be prompted with a pane that appears as follows:



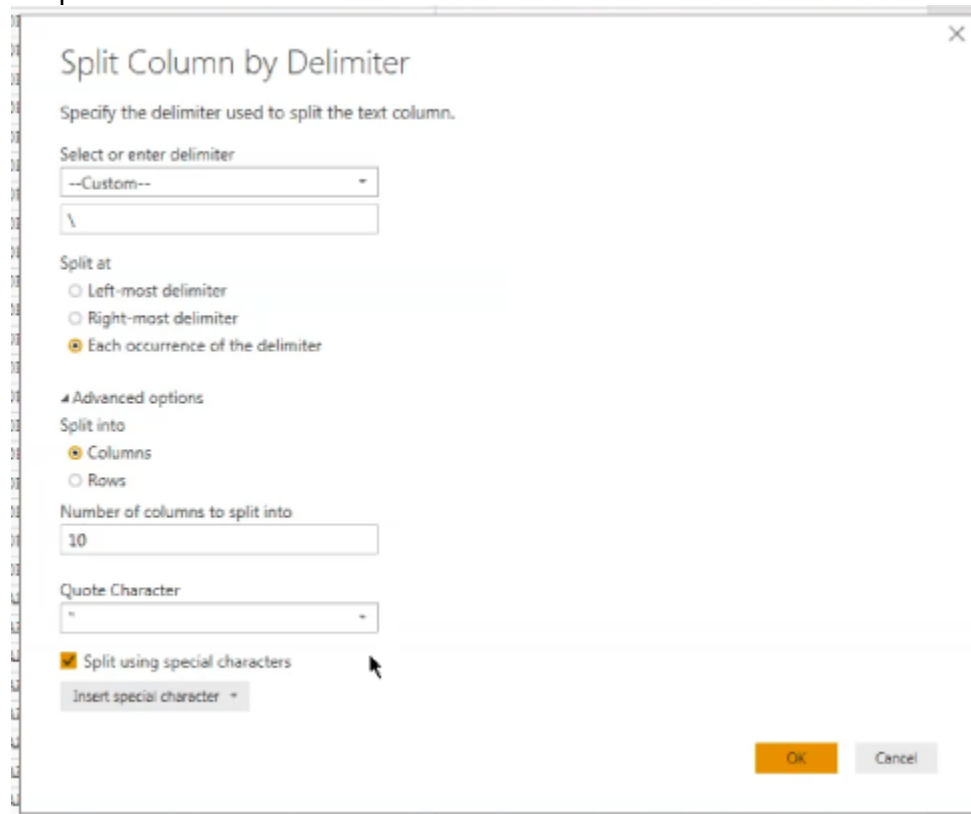
- Select "Custom" for Delimiter type and enter a period "." For the delimiter value. This will split out the ".itm" filetype extension from the column as a new column "ITEM NAME – Copy.2", delete this column. And re-name "ITEM NAME – Copy.1" to "CODItem_FK". Our result should look like this:

	ITEM NAME	DATABASE ID	CODItem_FK
1	/Imperial Content/Electrical/Generic/Hangers/Rec...	ADSK_10005732	/Imperial Content/Electrical/Generic/Hangers/R...
2	/Imperial Content/Electrical/Generic/Systems/Bas...	ADSK_10000001	/Imperial Content/Electrical/Generic/Systems/B...
3	/Imperial Content/Electrical/Generic/Systems/Bas...	ADSK_10000002	/Imperial Content/Electrical/Generic/Systems/B...
4	/Imperial Content/Electrical/Generic/Systems/Bas...	ADSK_10000003	/Imperial Content/Electrical/Generic/Systems/B...

Step 5: Create a Folder Hierarchy in the Autodesk Fabrication Folder Table

Now that we have our CODItem_FK, we now are going to begin to create the primary key to link our Autodesk Fabrication Folder table to it. Much like Step 4, we are going to split our “Folder Path” by the backslash “\” delimiter. This will allow us to select which columns we need to merge later to create our key.

- Navigate to the “Autodesk Fabrication” table, Right click on the “Folder Path” column and select “Duplicate Column”
- Right click and select “Folder Path – Copy” and select “Split Column”, “By Delimiter”. Select the Custom. Enter a back slash in the delimiter, then open the advanced editor portion of the pane. Enter the Info as follows:

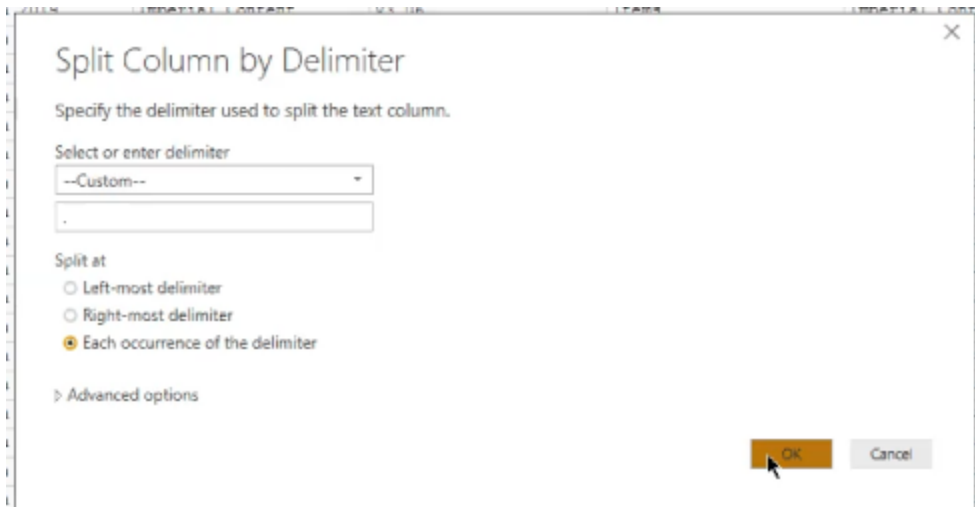


- The result will give us the first 10 folders as columns which will be used as a reference in the future. This comes in handy if your database location changes.

Step 6: Extract the Item Name from our Autodesk Fabrication Table

In this step we will remove unneeded columns the filetype extension from the “Name” column in the Autodesk Fabrication Folder table. This will then be merged later with our folder path to create our Primary key.

- Remove columns “Folder Path – Copy.1-5”, Content, And attributes. This will improve the performance of the file and give us our base hierarchy. A short cut to do this is to left click on the furthest left column, hold shift, select the furthest right column, right click, select “Remove Columns” or press delete.
- Select and duplicate the “Name” column. Split the “Name – Copy” column by the period “.” delimiter. Select “OK”



- Remove the “Name – Copy.2” column and rename the “Name – Copy.1” column to “ImgName”.

Folder Path - Copy.10	ImgName
Imperial Content	null
Imperial Content	Config
Imperial Content	Rectangular Bearer
Imperial Content	Bend
Imperial Content	Cross
Imperial Content	Large Radius Bend
Imperial Content	Offset
Imperial Content	Reducer
Imperial Content	Tee
Imperial Content	Wire Mesh

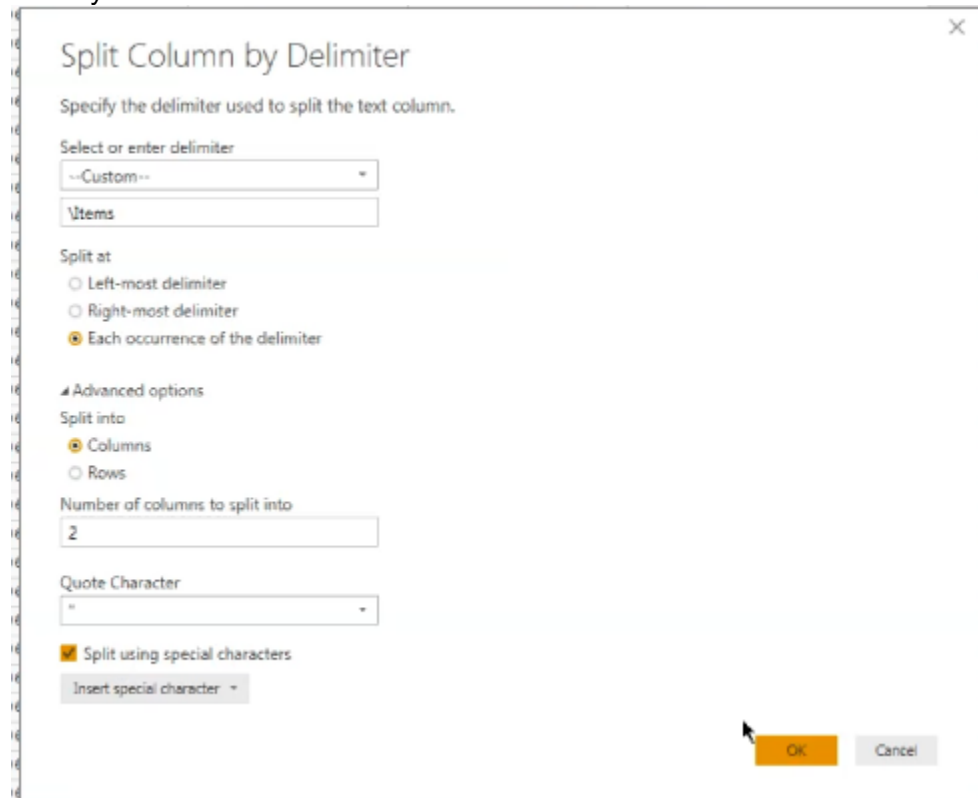
- Rename the “Folder Name – Copy.1-5” Columns to “Folder1-5”

Folder1	Folder2	Folder3	Folder4	Folder5	
Fabrication 2019	Imperial Content	V3.06			null
Fabrication 2019	Imperial Content	V3.06	Items	Imperial Content	B
Fabrication 2019	Imperial Content	V3.06	Items	Imperial Content	B

Step 7: Create Primary Key in the Autodesk Fabrication Folder Table

Now that we have prepared the columns in steps 5 and 6, we can build our primary key. Using the “ImgName” and “Folder Path” columns, we will modify them as follows:

- First, in the Autodesk Fabrication Folder table we will duplicate the “Folder Path” folder.
- Split the “Folder Path – Copy” by delimiter “\Items”. Next, in the advanced options select the “columns” option, enter 2 for number of columns, and split into special characters. Select “OK”. The result is the first part of the Primary key.



- Remove the “Folder Path Copy.1” Column
- Select the “Folder Path – Copy.2”, right click and select replace values. We are going to replace the backslash “\” with the forward slash “/”. This will give us our match to the folder path portion of our foreign key in the SI-WriteAllDatabaseIDs table.

Replace Values

Replace one value with another in the selected columns.

Value To Find
All \

Replace With
All /

> Advanced options

OK Cancel

- Next, duplicate the “ImgName” column. After it is created, hold down ctrl and select “Folder Path - Copy.2” and the “ImgName – Copy” columns. Right click and select the “Merge Columns”. Set the separator to “- - None - -” and enter “CODItemName” for the column name. This is now our Primary Key to the SI-WriteAllDatabaseIDs table.

Merge Columns

Choose how to merge the selected columns.

Separator
--None--

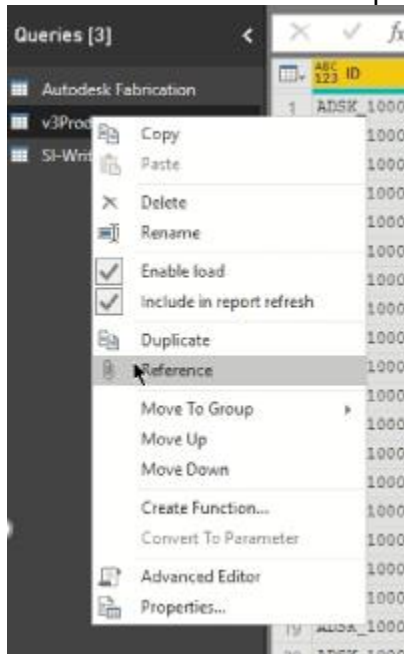
New column name (optional)
CODItemName

OK Cancel

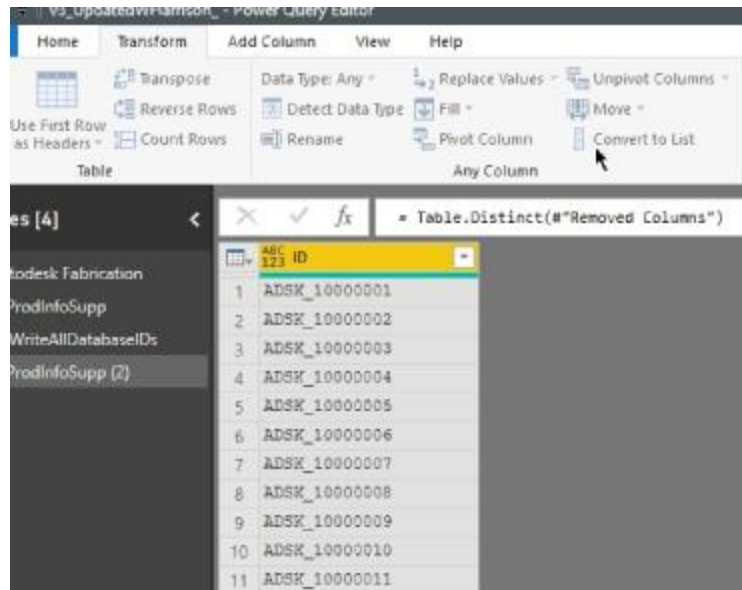
Step 8: Create the Database ID lookup List

In this step we are going to reference our Product Information and create a list of Database IDs. When you create a list, it only allows for Unique Values. This helps us in two ways, one it will give us an error if there are duplicate values in our database IDs, and the second giving us the ability to use it as a lookup reference when we build our relationships.

- Navigate to the Queries pane and right click on the “v3ProdInfoSupp” query. Select the “Reference” option in the dropdown.



- Right click on the ID column and select “Remove Other Columns” this will give us our IDs only.
- Navigate to the “Transform” tab on the ribbon and select “Convert to List”

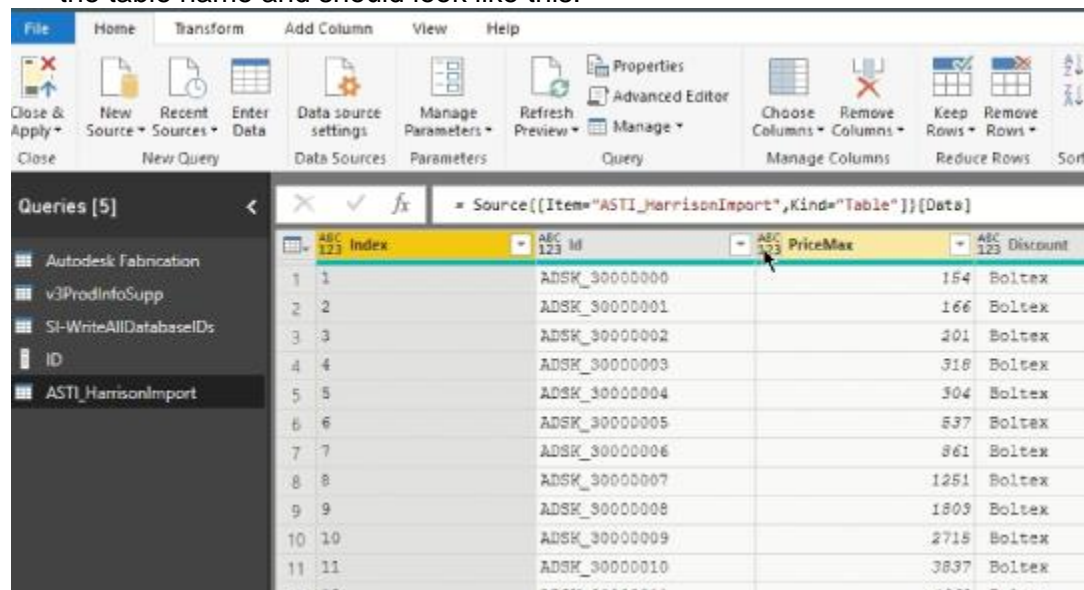


- Right Click “v3ProdInfoSupp(2)” and Rename it to “ID”

Step 9: Import Harrison Pricing

This step is the import of the Harrison Pricing excel file to show how to add more data to the existing model we have.

- Navigate to “New Source” in the ribbon of the Power Query module. Open the ASTI_HarrisonImport.xlsx file.
- Select the “ASTI_HarrisonImport” table and click “OK”. The result will be a new Query with the table name and should look like this:



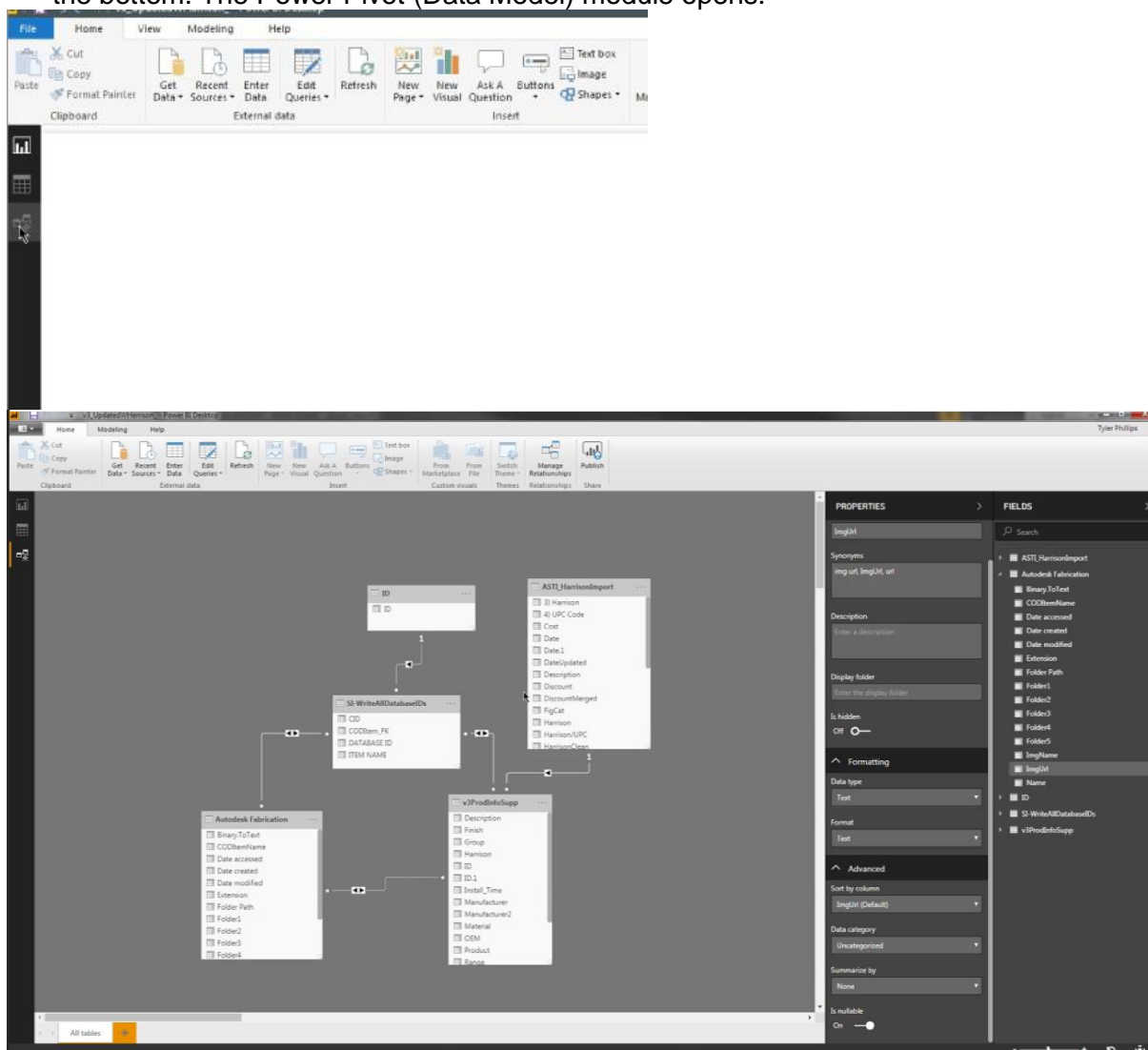
- Right click on the “ABC123” in the “PriceMax” column and select “Fixed Decimal Number”. This converts the format to currency.

	PriceMax	ABC 123 Discou
	154	Boltex
	166	Boltex
	201	Boltex

Step 10: Build Data Model with Relationships

Now that we have all our data imported and transformed, we are ready to build relationships. This is done in the Power Pivot module of Power BI Desktop.

- Navigate to and select the “Close and Apply” button in the ribbon of the Power Query Editor. This will bring us back to the main page of Power BI desktop. Select the Power Pivot button on the left ribbon. It is the 3rd button at the bottom. The Power Pivot (Data Model) module opens.



- Select the “Manage Relationships” in the top Ribbon. This will bring up all of our relationships between our tables. Some will be autogenerated but, we will also be creating a few of our own. The pane is shown below:

Manage relationships

Active	From: Table (Column)	To: Table (Column)
<input checked="" type="checkbox"/>	SI-WriteAllDatabaseIDs (CODItem_FK)	Autodesk Fabrication (CODItemName)
<input checked="" type="checkbox"/>	SI-WriteAllDatabaseIDs (DATABASE ID)	ID (ID)
<input checked="" type="checkbox"/>	SI-WriteAllDatabaseIDs (DATABASE ID)	v3ProdInfoSupp (ID)
<input checked="" type="checkbox"/>	v3ProdInfoSupp (ID)	ASTI_HarrisonImport (Id)

New... Autodetect... Edit... Delete

Close

- Select the first relationship between our “Autodesk Fabrication” table and our “SI-WriteAllDatabaseIDs” table and click “edit”. This will bring up the relationship preview pane.

Edit relationship

Select tables and columns that are related.

SI-WriteAllDatabaseIDs

ITEM NAME	DATABASE ID	CODItem_FK
erial Content/Mechanical/Systems/Anvil/Pipe Nip...	ADSK_30060281	/Imperial Content/Mechanical/Systems/Anvil/Pipe Nip...
erial Content/Mechanical/Systems/Anvil/Pipe Nip...	ADSK_30060282	/Imperial Content/Mechanical/Systems/Anvil/Pipe Nip...
erial Content/Mechanical/Systems/Anvil/Pipe Nip...	ADSK_30060283	/Imperial Content/Mechanical/Systems/Anvil/Pipe Nip...

Autodesk Fabrication

Folder4	Folder5	ImgName	CODItemName
Items	Imperial Content	Angled Grille Box	/Imperial Content/HVAC/Generic/Systems/Rectangular...
Items	Imperial Content	Angled Oval Tap	/Imperial Content/HVAC/Generic/Systems/Rectangular...
Items	Imperial Content	Angled Plenum with Round Tap	/Imperial Content/HVAC/Generic/Systems/Rectangular...

Cardinality

Many to Many (*:*)

Cross filter direction

Both

☒ Make this relationship active
 ☒ Apply security filter in both directions
 ☐ Assume referential integrity

⚠ This relationship has cardinality Many-Many. This should only be used if it is expected that neither column (SI-WriteAllDatabaseIDs and Autodesk Fabrication) contains unique values, and that the significantly different behavior of Many-many relationships is understood. [Learn more](#)

OK

Cancel

- This is a Many to Many relationship is between our Primary Key “CODItemName” column from the Autodesk Fabrication Table and our Foreign Key “CODItemName_FK” from the SI-WriteAllDatabaseIDs table. This relationship is also set to “Many to Many” and Both with the security filter checked. This option narrows the filtering down to require that both rows must match exactly to be shown.
- Our next relationship is between the our “DATABASE ID” from the SI-WriteAllDatabaseIDs Table and our “ID” column from the ID List. This relationship is also set to “Many to Many” and Both with the security filter un checked. This option allows for missing or blank values to show which will give us insight to errors in our data if they become present.

Edit relationship

Select tables and columns that are related.

SI-WriteAllDatabaseIDs

ITEM NAME	DATABASE ID	CODItem_FK
erial Content/Mechanical/Systems/Anvil/Pipe Nip...	ADSK_30060281	/Imperial Content/Mechanical/Systems/Anvil/Pipe Nip...
erial Content/Mechanical/Systems/Anvil/Pipe Nip...	ADSK_30060282	/Imperial Content/Mechanical/Systems/Anvil/Pipe Nip...
erial Content/Mechanical/Systems/Anvil/Pipe Nip...	ADSK_30060283	/Imperial Content/Mechanical/Systems/Anvil/Pipe Nip...

ID

ID
ADSK_10000001
ADSK_10000002
ADSK_10000003

Cardinality

Many to one (*:1)

Cross filter direction

Both

☒ Make this relationship active

☐ Apply security filter in both directions

☐ Assume referential integrity

OK
Cancel

- Just like the previous, the next relationship is between the database IDs of both our SI-WriteAllDatabaseIDs and v3ProdInfoSupp tables.

×

Edit relationship

Select tables and columns that are related.

SI-WriteAllDatabaseIDs

CID	ITEM NAME	DATABASE ID	CODItem_FK
2522	/Imperial Content/Mechanical/Systems/Anvil/Pipe Nip...	ADSK_30060281	/Imperial Content/Mechanical/Systems/Anv
2522	/Imperial Content/Mechanical/Systems/Anvil/Pipe Nip...	ADSK_30060282	/Imperial Content/Mechanical/Systems/Anv
2522	/Imperial Content/Mechanical/Systems/Anvil/Pipe Nip...	ADSK_30060283	/Imperial Content/Mechanical/Systems/Anv

v3ProdInfoSupp

ID	Group	Manufacturer	Product	Description	Size	Material	Specification
ADSK_10002393	Electrical	Generic	TBC	Unequal Tee	(6"x6") - (12"x6") - 12R	Alu-Zinc	Electrical
ADSK_10002394	Electrical	Generic	TBC	Unequal Tee	(6"x6") - (12"x6") - 18R	Alu-Zinc	Electrical
ADSK_10002395	Electrical	Generic	TBC	Unequal Tee	(6"x6") - (12"x6") - 24R	Alu-Zinc	Electrical

Cardinality


Many to Many (*:*)

Cross filter direction

Both

☒ Make this relationship active
 ☐ Apply security filter in both directions

☐ Assume referential integrity

 This relationship has cardinality Many-Many. This should only be used if it is expected that neither column (SI-WriteAllDatabaseIDs and v3ProdInfoSupp) contains unique values, and that the significantly different behavior of Many-many relationships is understood. [Learn more](#)

OK

Cancel

- The final relationship is between the Database IDs of our v3ProdInfoSupp and our ASTI_Harrison Import, set to the Many to Many Type like the previous.

×

Edit relationship

Select tables and columns that are related.

v3ProdInfoSupp

ID	Group	Manufacturer	Product	Description	Size	Material	Specification
ADSK_10002393	Electrical	Generic	TBC	Unequal Tee	(6"x6") - (12"x6") - 12R	Alu-Zinc	Electrical
ADSK_10002394	Electrical	Generic	TBC	Unequal Tee	(6"x6") - (12"x6") - 18R	Alu-Zinc	Electrical
ADSK_10002395	Electrical	Generic	TBC	Unequal Tee	(6"x6") - (12"x6") - 24R	Alu-Zinc	Electrical

<

>

ASTI_HarrisonImport

Index	Id	PriceMax	Discount	Units	DateUpdated	Status
400	ADSK_30000768	\$0.00		(each)	null	Active
401	ADSK_30000769	\$0.00		(each)	null	Active
402	ADSK_30000770	\$0.00		(each)	null	Active

Cardinality

Cross filter direction

Many to Many (*:*)

Both

☒ Make this relationship active

☐ Assume referential integrity

☐ Apply security filter in both directions

⚠ This relationship has cardinality Many-Many. This should only be used if it is expected that neither column (v3ProdInfoSupp and ASTI_HarrisonImport) contains unique values, and that the significantly different behavior of Many-many relationships is understood. [Learn more](#)

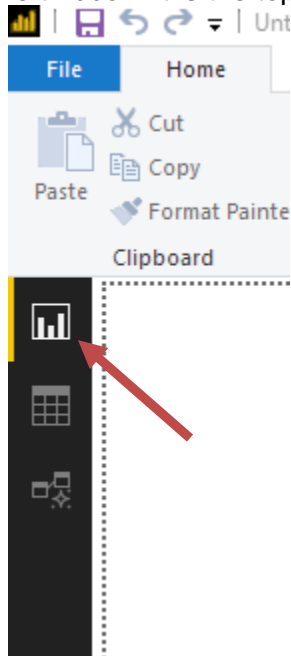
OK

Cancel

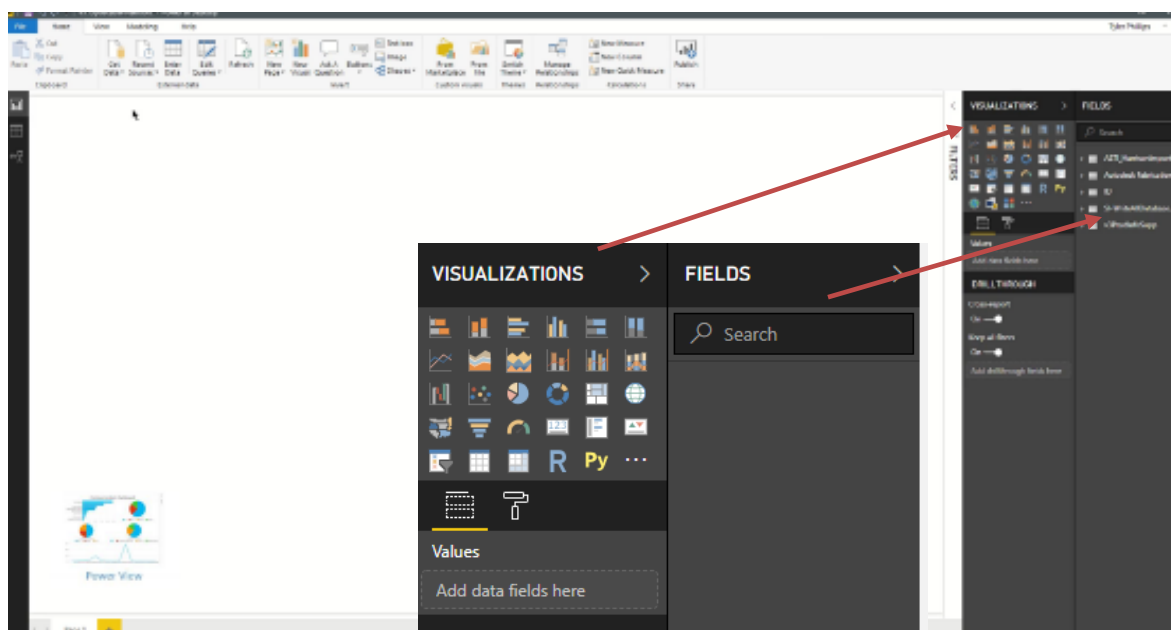
Step 11: Import and Build Visuals

Now that we have our relationships built, we are ready to start building our dashboard. We will first navigate to the main window of Power BI desktop (Power View) and begin to import and design our visuals. The process is broken down into 3 steps; selecting/importing a visual, inserting data into the visual, and finally formatting/customizing the visual to fit our needs.

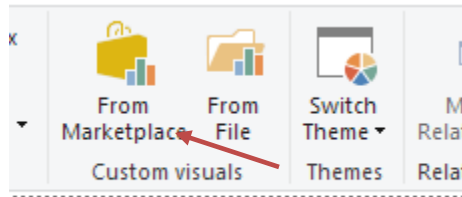
- Navigate to the Power View portion of Power BI desktop by selecting the Report button on the left ribbon. It is the top one.



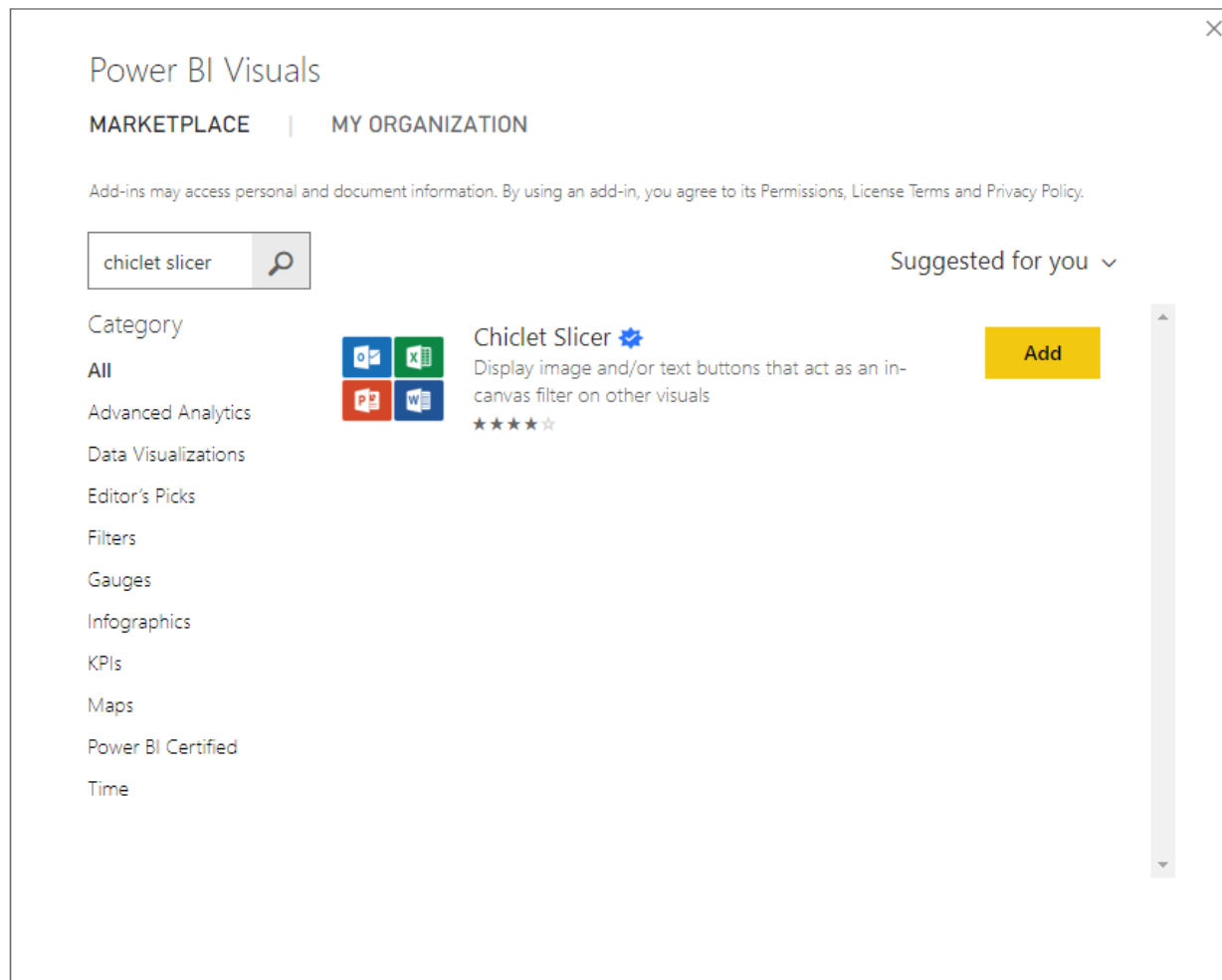
- This brings up the main dashboard which has our Visuals Pane and Data Fields shown on the right.



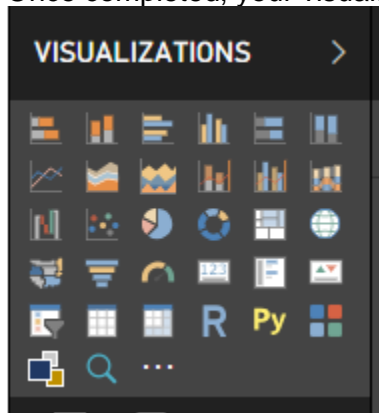
- For our dashboard we need to import 3 visuals that are not included in the default file. The ones we will be importing are the “Chiclet Slicer” , “Image Grid”, and “Text Filter” visuals. To import these, we need to navigate and select the “From Marketplace” button in the Custom Visuals portion of the ribbon.



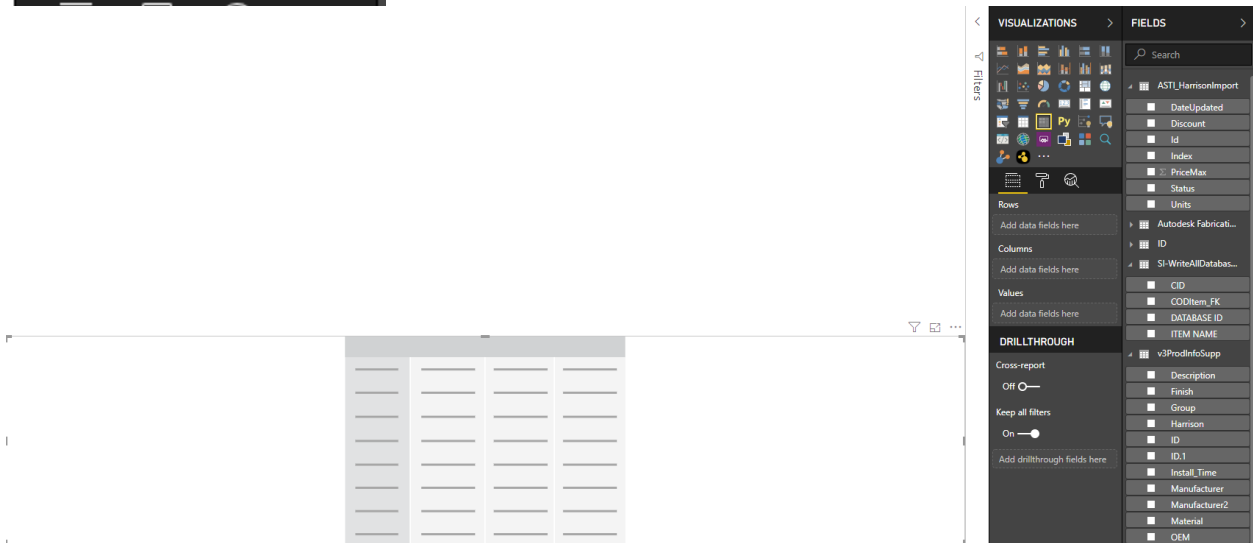
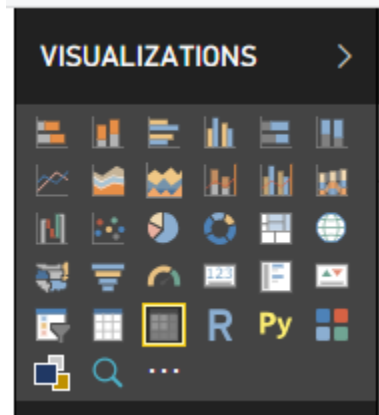
- To find the visual simply search the name in the search bar then click “Add” to bring it into your report. Repeat this step with all the visuals mentioned above.



- Once completed, your visuals pane should look like this (our imported visuals are the last 3):



- The first visual we are going to use is the “Table Visual”. Select and place it at the bottom of the dashboard.



- Next, we are going to add columns from our datasets, the final layout will closely resemble the Product Information Editor data set. Drag and drop the fields from their respective tables in the order shown below. (Install Type was renamed from Install_Time which was a typo)

VISUALIZATIONS
>

Values

- ID ▾ ×
- Group ▾ ×
- Material ▾ ×
- Install_Type ▾ ×
- Product ▾ ×
- Range ▾ ×
- Finish ▾ ×
- Description ▾ ×
- Size ▾ ×
- Specification ▾ ×
- Manufacturer ▾ ×
- PriceMax ▾ ×
- Units ▾ ×
- Harrison ▾ ×
- UPC ▾ ×
- OEM ▾ ×
- CID ▾ ×

DRILLTHROUGH

Cross-report

Off ☐

Keep all filters

FIELDS
>

ASTI_HarrisonImport

- ☐ DateUpdated
- ☐ Discount
- ☐ Id
- ☐ Index
- ☒ Σ PriceMax
- ☐ Status
- ☒ Units

Autodesk Fabricati...

- ID

SI-WriteAllDatabas...

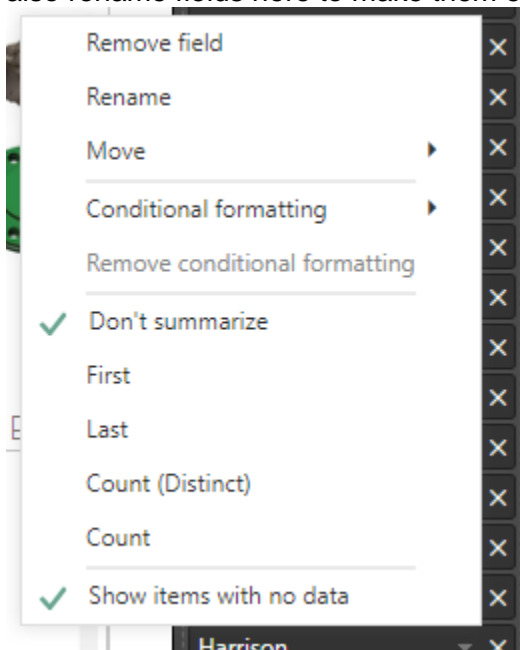
- ☒ CID
- ☐ CODItem_FK
- ☐ DATABASE ID
- ☐ ITEM NAME

v3ProdInfoSupp

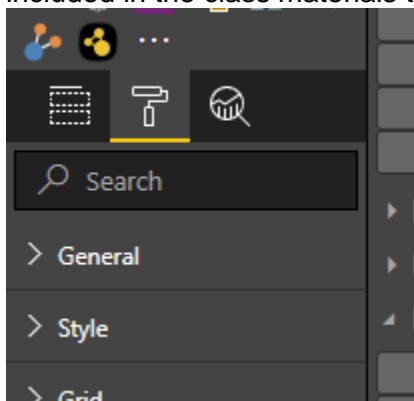
- ☒ Description
- ☒ Finish
- ☒ Group
- ☒ Harrison
- ☒ ID
- ☐ ID.1
- ☒ Install_Time
- ☒ Manufacturer
- ☐ Manufacturer2
- ☒ Material
- ☒ OEM
- ☒ Product
- ☒ Range
- ☒ Size
- ☐ Source_Descr...
- ☒ Specification
- ☒ UPC

Column	Table
ID	v3ProdInfoSupp
Group	v3ProdInfoSupp
Material	v3ProdInfoSupp
Install_Type (Renamed from Install_Time typo)	v3ProdInfoSupp
Product	v3ProdInfoSupp
Range	v3ProdInfoSupp
Finish	v3ProdInfoSupp
Description	v3ProdInfoSupp
Size	v3ProdInfoSupp
Specification	v3ProdInfoSupp
Manufacturer	v3ProdInfoSupp
PriceMax	ASTI_Harrison
Units	ASTI_Harrison
Harrison	v3ProdInfoSupp
UPC	v3ProdInfoSupp
OEM	v3ProdInfoSupp
CID	SI- WriteAllDatabaseIDs

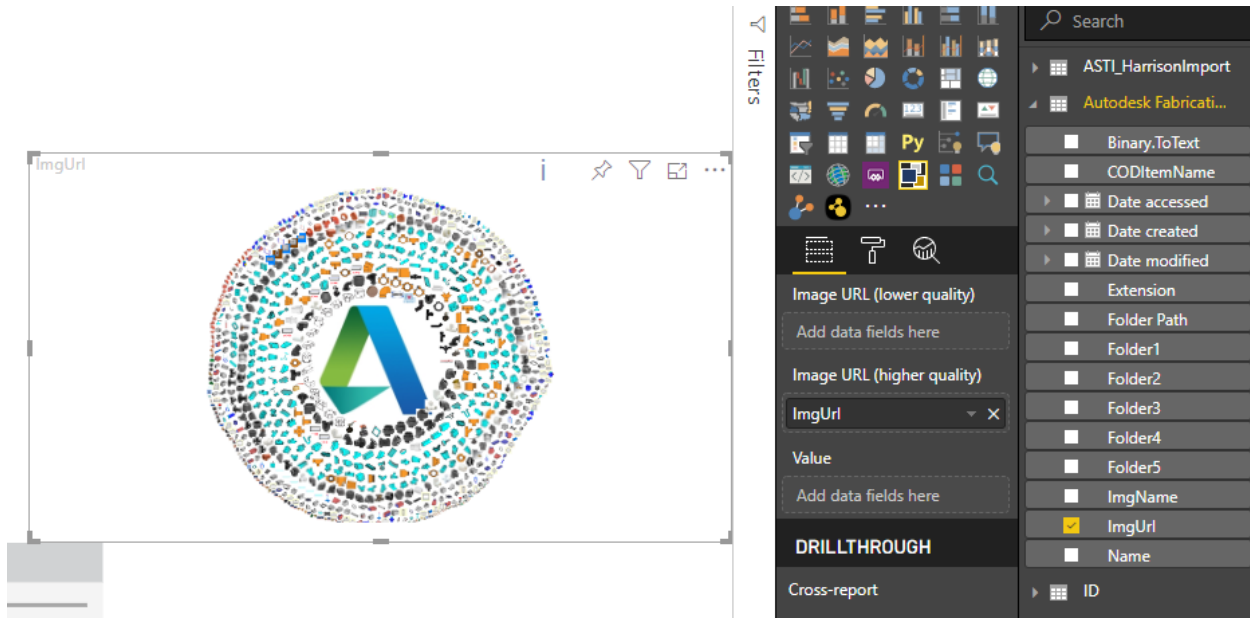
- Select the arrow on the first field (ID) and apply these settings (shown below). This will make our selections show all items with no data and the table will not summarize rows. You can also rename fields here to make them easier to understand for visualization.



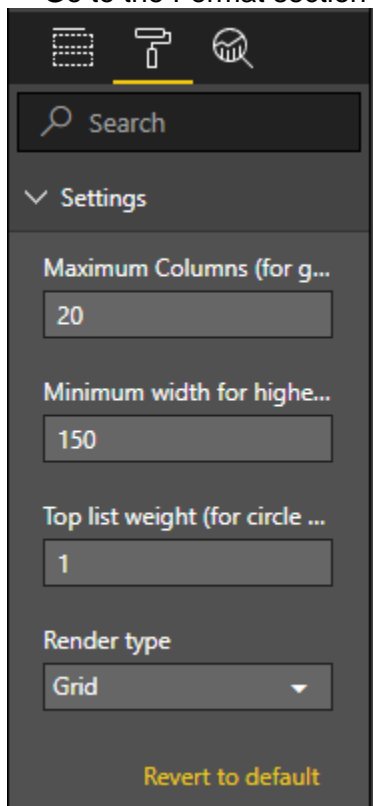
- To format the table, select the paintbrush icon of the visual, this is where we can apply all the formats and customizations to them that we would like. You can copy the .pbix file included in the class materials to get these formats.



- Our next visual will be the Image Grid. Select and place it as shown. Drag and drop the ImgUrl Field from the Autodesk Fabrication Table to the “Image URL (higher quality)” box in the visual fields editor.



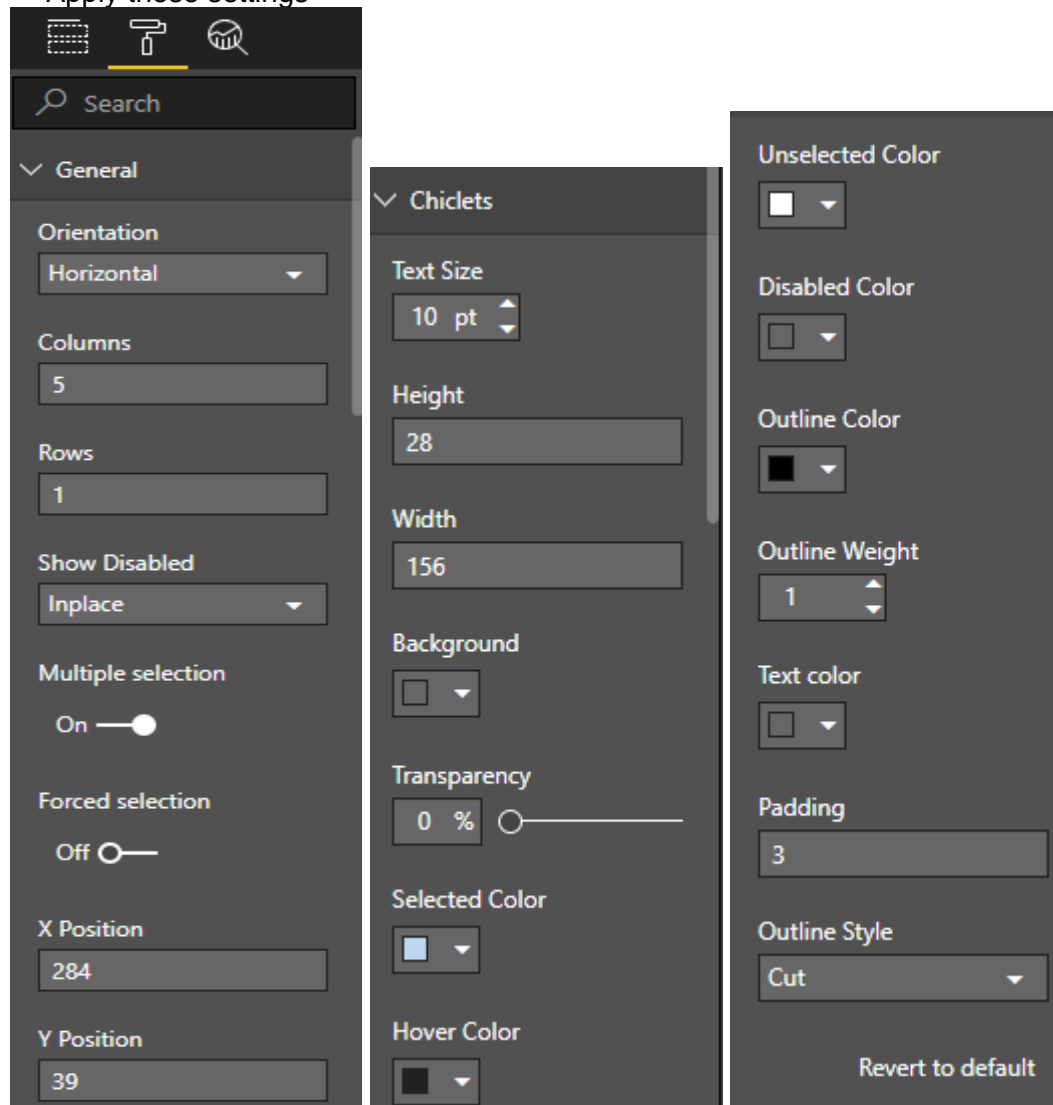
- Go to the Format section and apply these settings



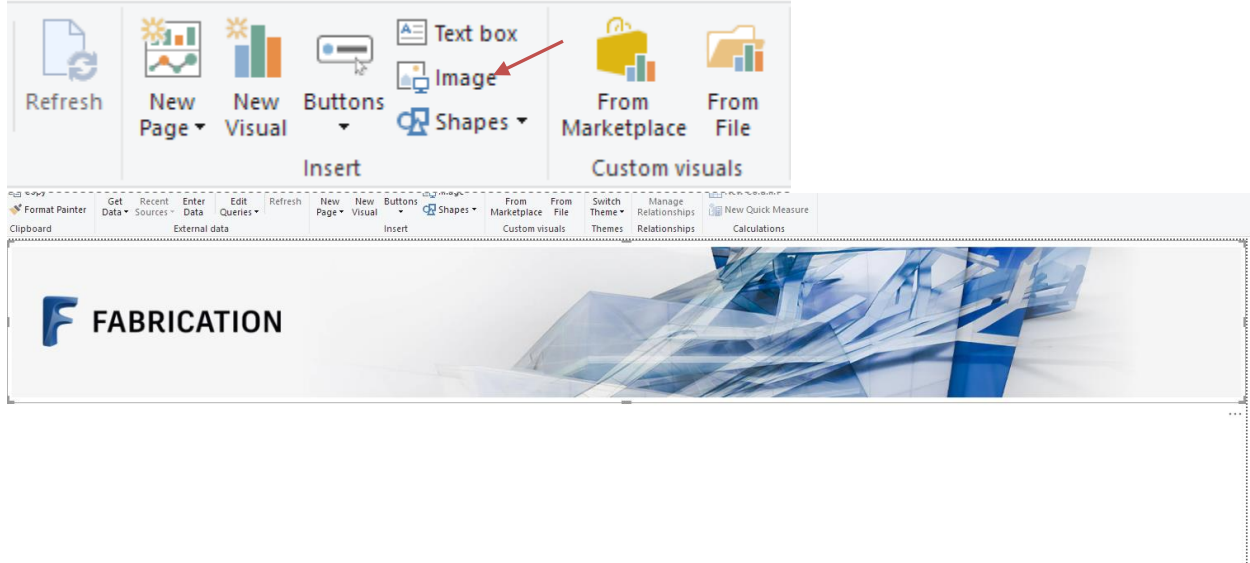
- Next add a chiclet slicer with the “Group” from the v3ProdInfoSupp table in the category slot of the field editor.



- Apply these settings



- Add two more chiclet slicers using the “Material” and “Install_Type” columns from the v3ProdInfoSupp Table. Use the same settings as above except change Orientation from Horizontal to Vertical and adjust columns and rows to your preference.
- Next, import the FabricationWallpaper.PNG by selecting insert image from the ribbon.



- Add a card visual with the ID column from our “ID” List and select “Count (Distinct)”. This will show us the number of database IDs per selection as we drill through the fields. Because of the relationships we made it will show a 2 or more on one Database ID when we select one in the table.

The screenshot displays a data visualization tool interface. On the left, a card visual shows the value "658" with the label "Count of ID" below it. Below the card, there are several images of mechanical parts, including green flanges and brown valves, with labels like "Lever", "Oval", and "30". A search bar with the text "CID" and a search icon is also visible.

The main interface is divided into two panels: "VISUALIZATIONS" and "FIELDS". The "VISUALIZATIONS" panel shows a grid of various chart and table icons. The "FIELDS" panel shows a list of fields from different tables, including "ASTI_HarrisonImport", "Autodesk Fabricati...", "ID", and "SI-WriteAllDatabas...". The "ID" field is selected, and a context menu is open over it, showing options: "Remove field", "Rename", "First", "Last", "Count (Distinct)" (which is checked), "Count", and "Show value as".

Below the "FIELDS" panel, there is a "DRILLTHROUGH" section with a "Cross-report" toggle set to "Off", a "Keep all filters" toggle set to "On", and an "Add drillthrough fields" button.

- Add a Text filter visual with the CID column from our “SI-WriteAllDatabseIDs” table and select “Show Items With No Data”. This allows us to search our database by CID. If there are any missing, it means our Product Info or Script needs to be updated.

The screenshot shows the Tableau interface. On the left, a preview of the visualization displays '52.75K Count of ID' with a search bar for 'CID'. The main workspace has two shelves: 'Visualizations' and 'Fields'. The 'Visualizations' shelf contains a bar chart icon. The 'Fields' shelf contains a search bar and a list of fields from the 'SI-WriteAllDatabseIDs' table: 'ID', 'CID', 'CODItem_FK', and 'DATABASE ID'. The 'CID' field is selected. A context menu is open over the 'CID' field, showing options: 'Remove field', 'Rename', and 'Show items with no data' (which is checked).

- Our Final Product should look like this:

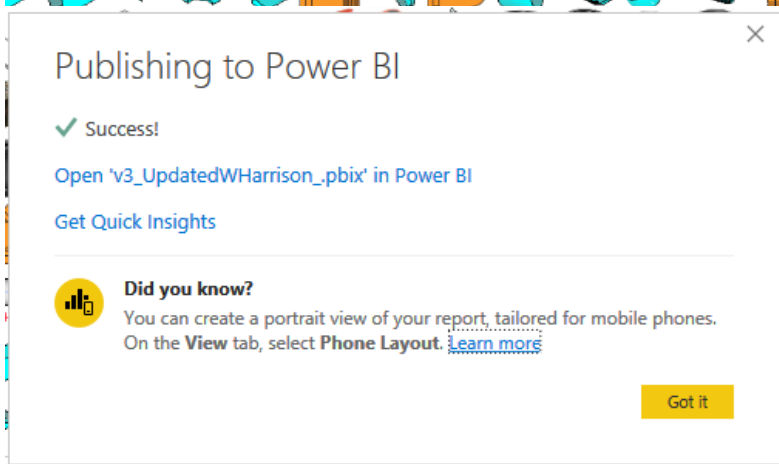
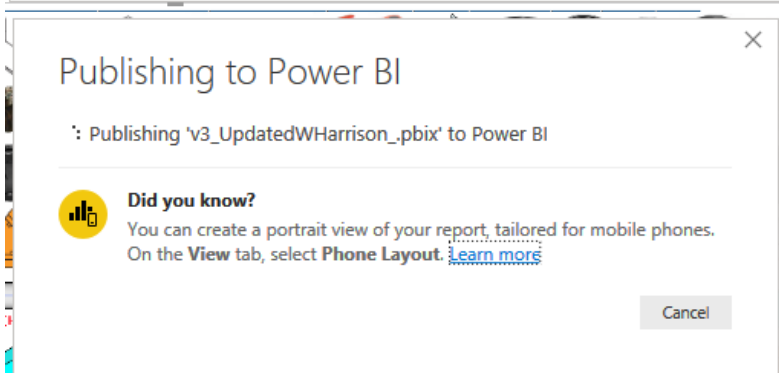
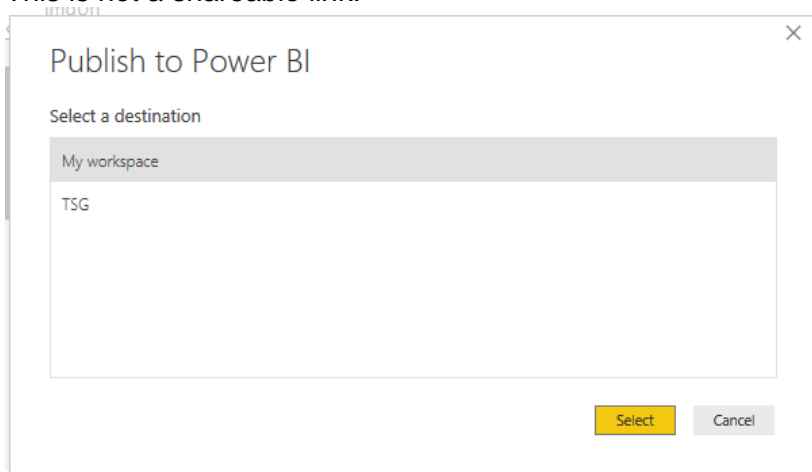
The screenshot shows the final Tableau dashboard titled 'FABRICATION'. It features a 'Group' filter with tabs for Ancillary, DWV, Electrical, HVAC, Mechanical, and Structural. The main visualization is a grid of product images. Below the grid is a detailed data table with columns for ID, Group, Material, Install_Type, Product, Range, Finish, Description, Size, Specification, Manufacturer, PriceMax, Units, Harrison, UPC, OEM, and CID.

ID	Group	Material	Install_Type	Product	Range	Finish	Description	Size	Specification	Manufacturer	PriceMax	Units	Harrison	UPC	OEM	CID
ADSK_10000001	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	2" (1" deep)	Electrical	Generic						
ADSK_10000002	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	4" (1" deep)	Electrical	Generic						
ADSK_10000003	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	6" (1" deep)	Electrical	Generic						
ADSK_10000004	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	8" (1" deep)	Electrical	Generic						
ADSK_10000005	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	12" (1" deep)	Electrical	Generic						
ADSK_10000006	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	18" (1" deep)	Electrical	Generic						
ADSK_10000007	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	20" (1" deep)	Electrical	Generic						
ADSK_10000008	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	24" (1" deep)	Electrical	Generic						
ADSK_10000009	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	2" (2" deep)	Electrical	Generic						
ADSK_10000010	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	4" (2" deep)	Electrical	Generic						
ADSK_10000011	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	6" (2" deep)	Electrical	Generic						
ADSK_10000012	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	8" (2" deep)	Electrical	Generic						
ADSK_10000013	Electrical	Alu-Zinc	Coupled	TBC	Basket	Zinc Plated	Bend	12" (2" deep)	Electrical	Generic						

Step 12: Uploading our Dashboard to the Web (Power BI Service)

In this step we will upload our dashboard to the web for sharing. This is where our working dashboards can have refresh schedules set and QR codes generated.

- Navigate to the “Publish” button in the share portion of the top ribbon and select it. Select “My Workspace” in the Publish to Power BI Pane. Next, a progress pane that will generate a link to where it is in Power BI Service. Click the link to pull up your Power BI Service website. This is not a shareable link.

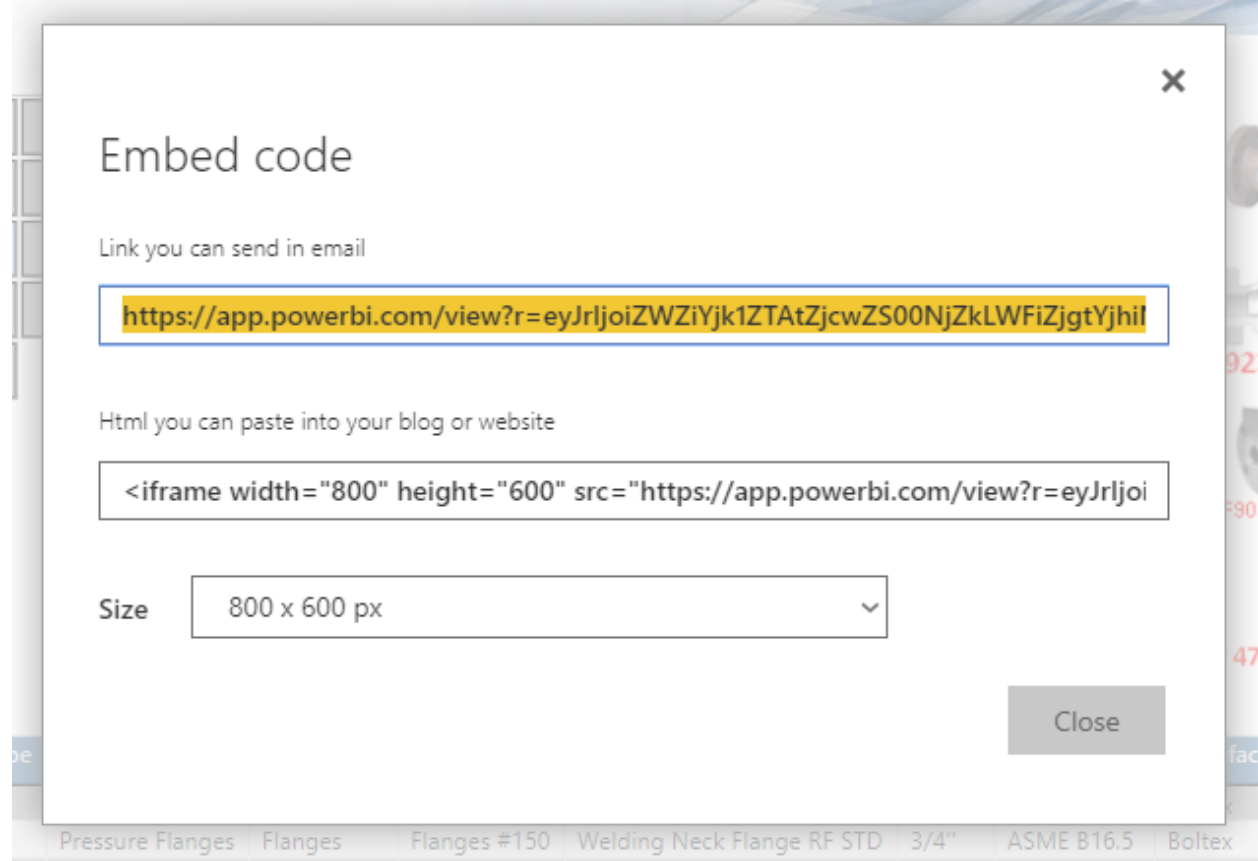


The screenshot displays a Power BI report titled 'v3_UpdatedWHarrison'. The 'File' menu is open, showing options: 'Save as' (Save a copy of this report), 'Print' (Print current page), 'Publish to web' (Embed this report for public access by anyone on the Internet), 'Export to PowerPoint' (Export this report as a PowerPoint presentation), 'Export to PDF' (Export this report to a PDF file), and 'Download report (Preview)' (Download a .pbix copy). The report content includes a 'Mechanical' group filter, a 'Count of ID' card showing 658, and a table of mechanical parts with columns: ID, Group, Material, Insta Type, Product, Range, Finish, Description, Size, Specification, Manufacturer, PriceMax, Units, Harrison, UPC, OEM, CID. The table lists various mechanical parts like 'Welding Neck Flange RF STD' and 'Welding Neck Flange RF STD' with their respective specifications and prices.

- Once you are at the site, select file then “Publish to the Web”.

This is a close-up of the 'File' menu in the Power BI report interface. The menu options are: 'Save as' (Save a copy of this report), 'Print' (Print current page), 'Publish to web' (Embed this report for public access by anyone on the Internet), 'Export to PowerPoint' (Export this report as a PowerPoint presentation), 'Export to PDF' (Export this report to a PDF file), and 'Download report (Preview)' (Download a .pbix copy). The 'Publish to web' option is highlighted, indicating the next step in the process.

- Copy and paste the Embed Code in a new window



- Your Dashboard is now shareable to anyone.
 - Note: If you want to remove information. Re-Upload the same Dashboard with no data in it (Blank files). This will remove all the information on the next refresh.

Step 13: Setting Refresh Schedules

There are two ways to update and refresh Dashboards. One is manually by repeating the step above. Two is automatically. There is an additional software that needs to be downloaded to do this and it's called On-Premises data gateway.

- Download the software from the class documents "PowerBIGatewayInstaller.exe" as (personal mode)
 - See link for explanation <https://powerbi.microsoft.com/en-us/gateway/>
- Set up and make sure it is running.

On-premises data gateway


Status

Service Settings

Diagnostics

Network

Connectors

 The gateway tp_home is online and ready to be used.

Gateway version number: 3000.9.194 (September 2019)

A new version is available. [Download](#)

☒ Help us improve the on-premises data gateway by sending usage information to Microsoft.
[Read the privacy statement online](#)


Logic Apps, Azure Analysis Services

North Central US

[Create a gateway in Azure](#)


PowerApps, Microsoft Flow

Default environment


 Ready


Power BI


Default environment


 Ready


- From you Power BI Service site select My Workspace and navigate to your datasets



Power BI



My workspace

 Home

 Favorites >

 Recent >

 Apps

 Search content...


Dashboards

Reports

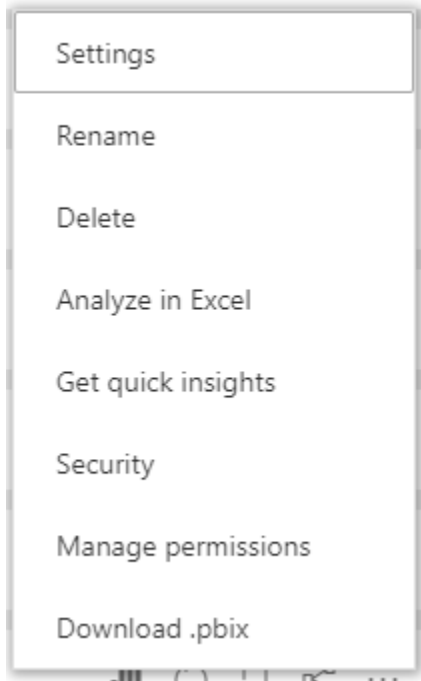
Workbooks

Datasets

NAME ↑

 MonthlvProiectStatus-v1.2

- Find your data set (same name as .pbix file) and select “Settings” from the 3-dot ellipsis



- It will bring up the settings for this Dataset. If you uploaded the dashboard with the “Personal Gateway” it will remember your credentials. If you choose On Premises you will need to add the data sources individually.
- Navigate to “Scheduled Refresh” to set a refresh schedule and apply

◀ Data source credentials

ASTI_HarrisonImport.xlsx	Edit credentials
SI-WriteAllDatabaseIDs.TXT	Edit credentials
V3.06	Edit credentials
V3ProdInfo.xlsx	Edit credentials

▶ Parameters

◀ Scheduled refresh

Keep your data up to date

☒ On

Refresh frequency

Daily ▼

Time zone

(UTC-05:00) Eastern Time (US and Canada) ▼

Time

[Add another time](#)

☒ Send refresh failure notifications to the dataset owner

Email these users when the refresh fails

Tyler Phillips ✕ Enter email addresses

Apply

Discard

Tips and Tricks

Tip1: Extract .xlsx or .csv from a dashboard

You can extract a .csv from a table once you have drilled down to an item type. I use this feature to create new content or modify existing content in the product information editor.

- In the dashboard select the ellipses in the top right corner. Select “export data” and save as however you like.

91CC300RN1F91CC150RN1 F90CS150RN1 F91CS150RN1

s	Harrison	UPC	OEM	CID
h)	106WB0058	990734000000	120002000	2522
h)	106WB0059	990734000000	120003000	2522
h)	106WB0060	990734000000	120010000	2522
h)	106WB0061	990734000000	120011000	2522
h)	106WB0062	990734000000	120012000	2522
h)	106WB0063	990734000000	120020000	2522
h)	106WB0064	990734000000	120022000	2522
h)	106WB0065	990734000000	120030000	2522
h)	106WB0066	990734000000	120032000	2522
h)	106WB0067	990734000000	120040000	2522
h)	106WB0068	990734000000	120050000	2522

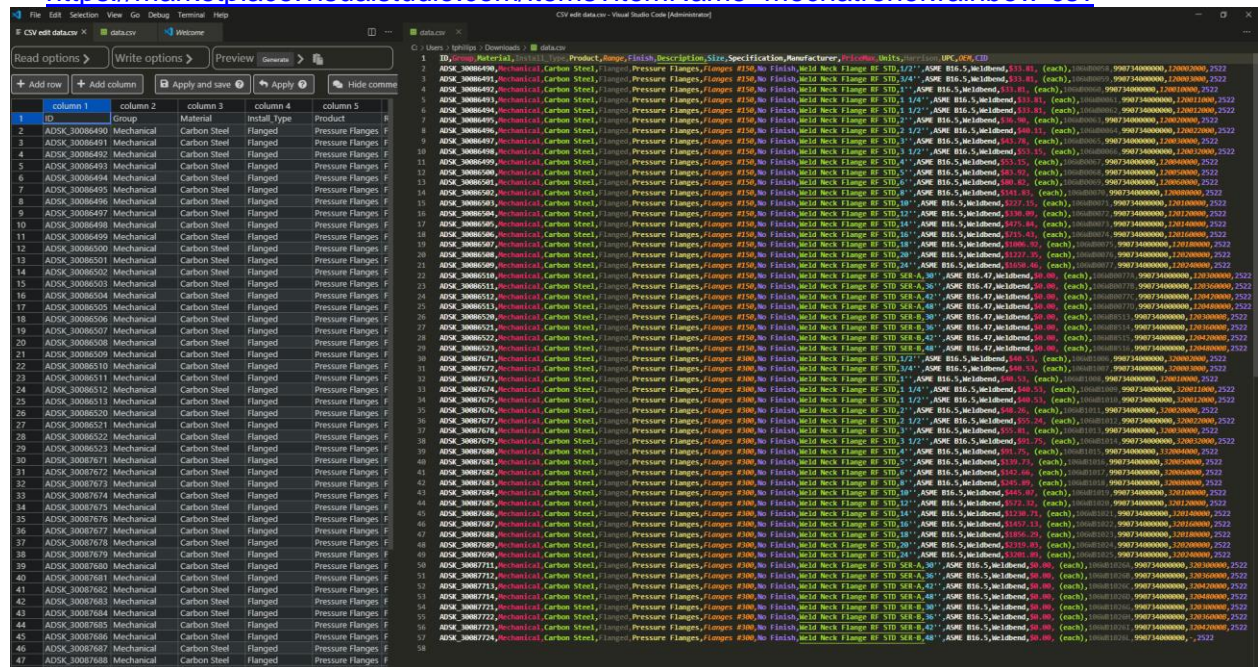
Open comments
Export data
Show data
Spotlight
Sort descending
Sort ascending
Sort by

File	Home	Insert	Page Layout	Formulas	Data	Review	View	Developer	Power Pivot	Power SQL Update	Inquire	Data Streamer	BLUEBEAM	Help
Applied filters:														
A	B	C	D	E	F	G	H	I	J	K	L			
Applied filters:Install_Type is FlangedMaterial is Carbon SteelGroup is MechanicalIncluded (1) data:image/png;base64, IVBORw0KGgoAAAANSUgEugAAAEAAAABACAIAAAAC+aJAAACXBIWKN														
ID	Group	Material	Install_Type	Product	Range	Finish	Description	Size	Specification	Manufacturer	PriceMax			
ADSK_30086490	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	1/2"	ASME B16.5	Weldbend	\$33.8			
ADSK_30086491	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	3/4"	ASME B16.5	Weldbend	\$33.8			
ADSK_30086492	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	1"	ASME B16.5	Weldbend	\$33.8			
ADSK_30086493	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	1 1/4"	ASME B16.5	Weldbend	\$33.8			
ADSK_30086494	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	1 1/2"	ASME B16.5	Weldbend	\$33.8			
ADSK_30086495	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	2"	ASME B16.5	Weldbend	\$36.9			
ADSK_30086496	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	2 1/2"	ASME B16.5	Weldbend	\$40.1			
ADSK_30086497	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	3"	ASME B16.5	Weldbend	\$43.7			
ADSK_30086498	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	3 1/2"	ASME B16.5	Weldbend	\$53.1			
ADSK_30086499	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	4"	ASME B16.5	Weldbend	\$53.1			
ADSK_30086500	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	5"	ASME B16.5	Weldbend	\$83.9			
ADSK_30086501	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	6"	ASME B16.5	Weldbend	\$80.8			
ADSK_30086502	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	8"	ASME B16.5	Weldbend	\$141.8			
ADSK_30086503	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	10"	ASME B16.5	Weldbend	\$227.1			
ADSK_30086504	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	12"	ASME B16.5	Weldbend	\$330.0			
ADSK_30086505	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	14"	ASME B16.5	Weldbend	\$475.8			
ADSK_30086506	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	16"	ASME B16.5	Weldbend	\$715.4			
ADSK_30086507	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	18"	ASME B16.5	Weldbend	\$1,006.9			
ADSK_30086508	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	20"	ASME B16.5	Weldbend	\$1,227.3			
ADSK_30086509	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD	24"	ASME B16.5	Weldbend	\$1,650.4			
ADSK_30086510	Mechanical	Carbon Steel	Flanged	Pressure Flanges	Flanges #150	No Finish	Weld Neck Flange RF STD SER-A	30"	ASME B16.47	Weldbend	\$0.0			

Tip 2: Download VsCode and these extensions

VsCode editor will open .csv files and with the extension can be edited without the formatting applied. This is a huge time saver when editing or modifying product information.

- VsCode download link: <https://code.visualstudio.com/download>
- Csv editor extension: <https://marketplace.visualstudio.com/items?itemName=janisdd.vscodedit-csv>
- Rainbow csv: <https://marketplace.visualstudio.com/items?itemName=mechatroner.rainbow-csv>

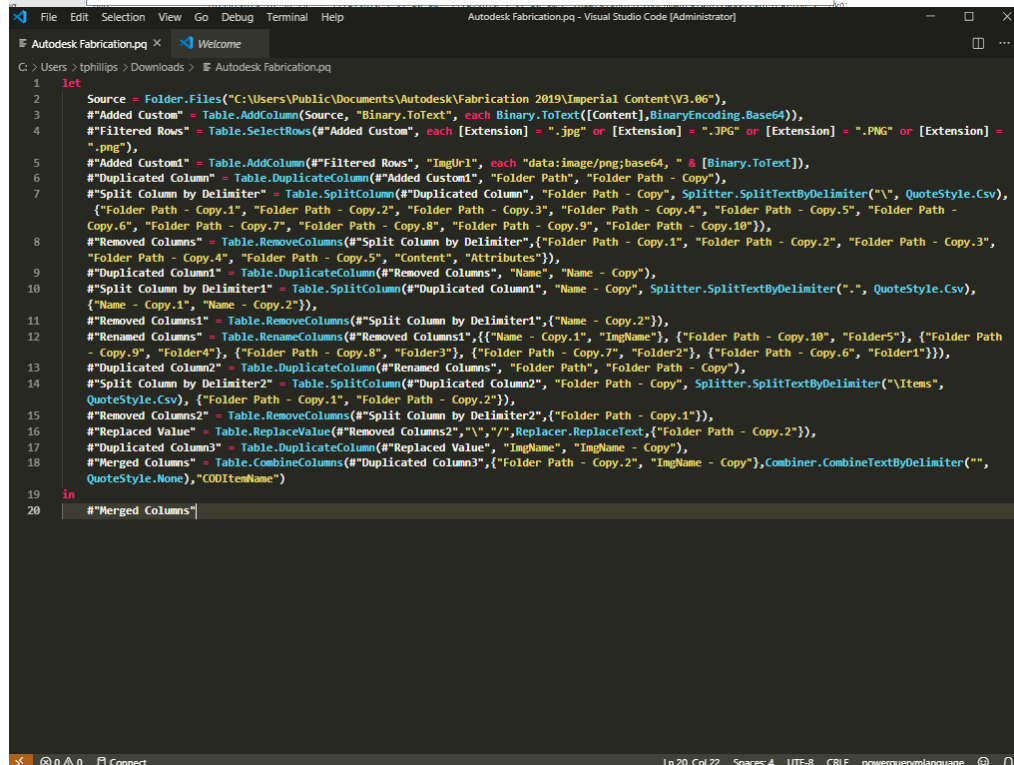
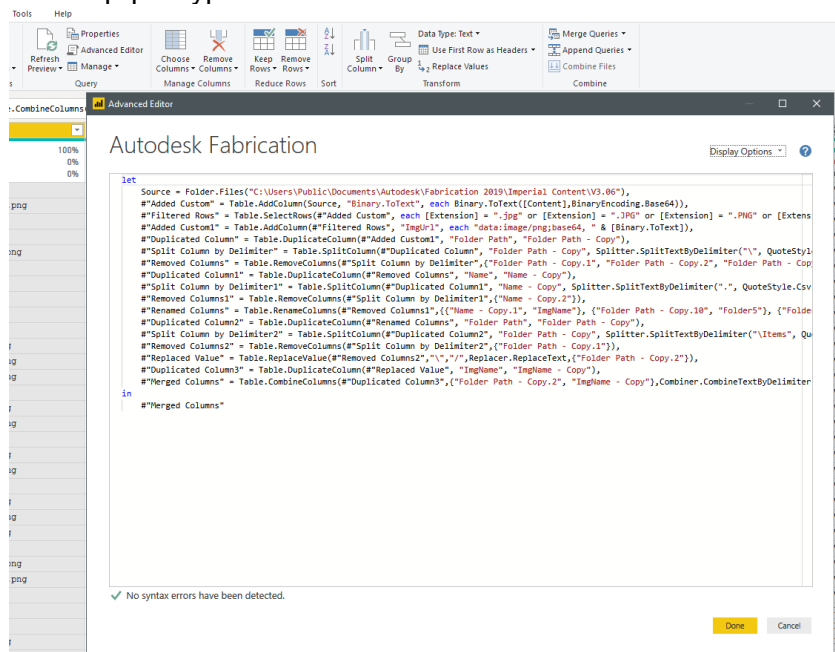


ID	Group	Material	Install Type	Product	Units
1	ADSK_3008440	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
2	ADSK_3008441	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
3	ADSK_3008442	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
4	ADSK_3008443	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
5	ADSK_3008444	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
6	ADSK_3008445	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
7	ADSK_3008446	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
8	ADSK_3008447	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
9	ADSK_3008448	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
10	ADSK_3008449	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
11	ADSK_3008450	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
12	ADSK_3008451	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
13	ADSK_3008452	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
14	ADSK_3008453	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
15	ADSK_3008454	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
16	ADSK_3008455	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
17	ADSK_3008456	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
18	ADSK_3008457	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
19	ADSK_3008458	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
20	ADSK_3008459	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
21	ADSK_3008460	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
22	ADSK_3008461	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
23	ADSK_3008462	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
24	ADSK_3008463	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
25	ADSK_3008464	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
26	ADSK_3008465	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
27	ADSK_3008466	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
28	ADSK_3008467	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
29	ADSK_3008468	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
30	ADSK_3008469	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
31	ADSK_3008470	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
32	ADSK_3008471	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
33	ADSK_3008472	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
34	ADSK_3008473	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
35	ADSK_3008474	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
36	ADSK_3008475	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
37	ADSK_3008476	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
38	ADSK_3008477	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
39	ADSK_3008478	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
40	ADSK_3008479	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
41	ADSK_3008480	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
42	ADSK_3008481	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
43	ADSK_3008482	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
44	ADSK_3008483	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
45	ADSK_3008484	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
46	ADSK_3008485	Mechanical	Carbon Steel	Flanged	Pressure Flanges F
47	ADSK_3008486	Mechanical	Carbon Steel	Flanged	Pressure Flanges F

Tip 3: Save queries from the advanced editor to paste for later use

Save M language Scripts from the Advanced editor as power query files

- Download Power Query Extension for VsCode:
<https://marketplace.visualstudio.com/items?itemName=sea1jxr.powerquerymlanguage>
- Open advanced editor from Power Query, copy and paste into VsCode and save as .pq filetype

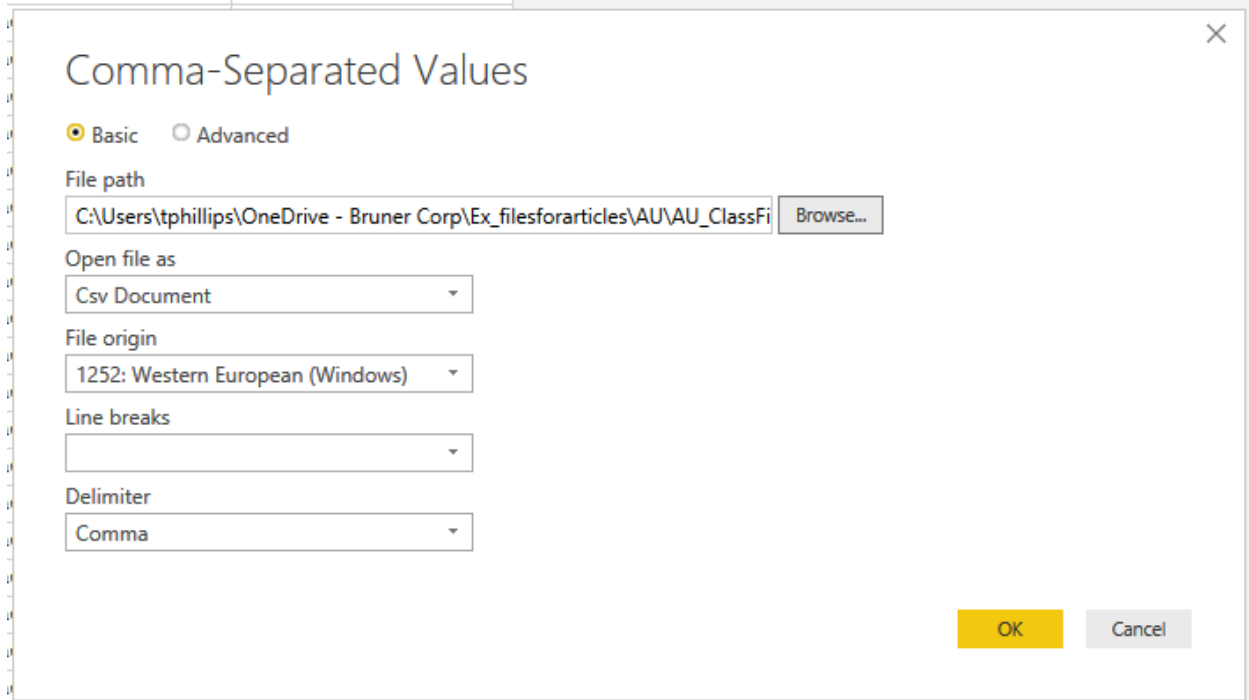


Common Errors

Data Source Errors

These are usually caused by working on a different domain or the file you connected to has been moved

- To fix navigate to the source step in the applied steps pane in power query and select the gear then browse to the new location and select OK.



- In the class files, all of the queries are saved as txt files. Once you have saved and extracted the folder to your downloads folder. Input your user account info in the source blocks shown below: then paste into the advanced editor in Power BI

```

QueryTemplate_ASTIHarrisonImport.txt x  Untitled-1
QueryTemplate_ASTIHarrisonImport.txt
1  let
2      Source = Excel.Workbook(File.Contents("C:\Users\{YourUsernameHere}\Downloads\CC5317252_Add1ClassMaterials\ASTI_HarrisonImport.xlsx"), null, true),
3      ASTI_HarrisonImport_Table = Source[[Item="ASTI_HarrisonImport",Kind="Table"]][Data],
4      #"Changed Type" = Table.TransformColumnTypes(ASTI_HarrisonImport_Table,{{"PriceMax", Currency.Type}})
5  in
6      #"Changed Type"

```

```

QueryTemplate_ASTIHarrisonImport.txt
let
    Source = Excel.Workbook(File.Contents("C:\Users\tphillips\Downloads\CC5317252_Add1ClassMaterials\ASTI_HarrisonImport.xlsx"), null, true),
    ASTI_HarrisonImport_Table = Source[[Item="ASTI_HarrisonImport",Kind="Table"]][Data],
    #"Changed Type" = Table.TransformColumnTypes(ASTI_HarrisonImport_Table,{{"PriceMax", Currency.Type}})
in
    #"Changed Type"

```


Resources & Contact Info

RADACAD

This site will prompt you to enter an email and you will receive 6 books outlining everything you need to get started on Power BI. Most if not all of the content in this handout owes its roots to these books.

- <https://radacad.com/>

Excel is Fun

You Tube account that gives lessons for just about everything you need to know in Power query and is definitely worth a subscribe.

- <https://www.youtube.com/user/ExcelsFun>

Contact Info

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- Work Email: tphillips@brunercorp.com
- Personal Email: tphornet57@gmail.com
- Git Hub Link to files: [CCS317252-Navigating Fabrication BIM Content With PowerBI](#)