ANALYTICS IGNITION BOOSTER

TECHNICAL LEARNING WEEK 2

POWER BI- PART I

Time to complete: 20 min

Exercise: Plot order lines history in Power BI

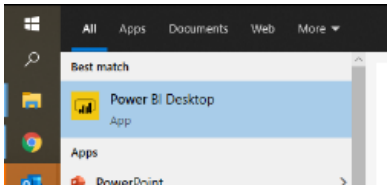
Case description: visualization of outbound order lines

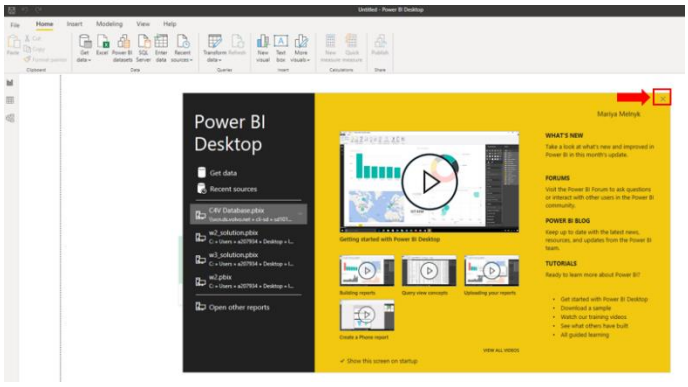
Contents

☑ In case you do not have PowerBI Desktop, request it in Faros:
Faros => Applications => Microsoft Power BI Desktop 64bit PmVer English (US). It will be Auto approved

☑ Open PowerBI desktop. Once Power BI has loaded, close the yellow window that pops up.

Video tutorial: 00:00-00:30





☑ Save PowerBI file on your computer via **File => Save As** in the left upper corner.

Import data

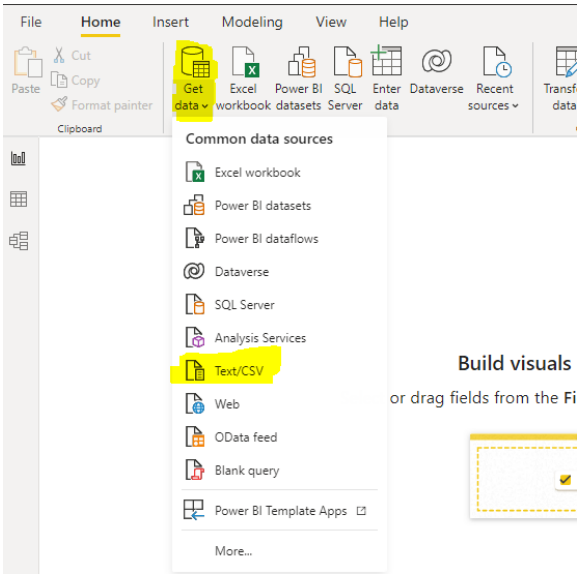
Video tutorial: 00:40-02:10

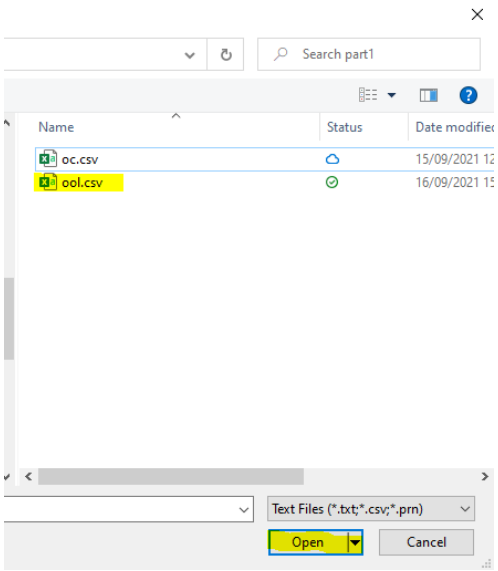
It is not yet possible for everyone in SML to access SML Data Hub. Here we extracted some data for you to practice on, so you already now can see how the data looks inside SML Data Hub. In case you missed it, check out a brief overview of SML Data Hub in Discover task from week 1 video.

The data are limited to scope of certain part numbers to limit file size and ease the learning.

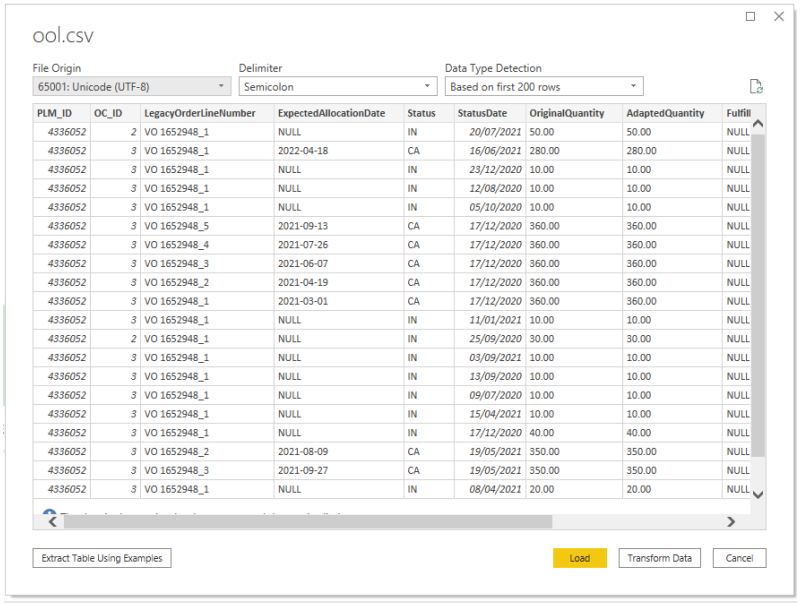
- ☑ Download both csv files here: ool.csv and oc.csv. You can save them in the same folder as your Power BI file. We will start working with ool.csv and will need oc.csv later on.
  'ool.csv' data set is the order lines received at CDC Gent from July 2020 to July 2021 for a limited scope of parts.
- ☑ As explained in the Discover task of the first week (video), even though the source systems are different from one warehouse to another, SML Data Hub provides normalized data so it looks the same.
  - PLM_ID corresponds to a part number for a specific location.
  - OC_ID corresponds to an order class

- ☑ In power BI, use the 'Get data' button to import ool.csv file.





Once the preview is loaded, you can see the first rows of your dataset:

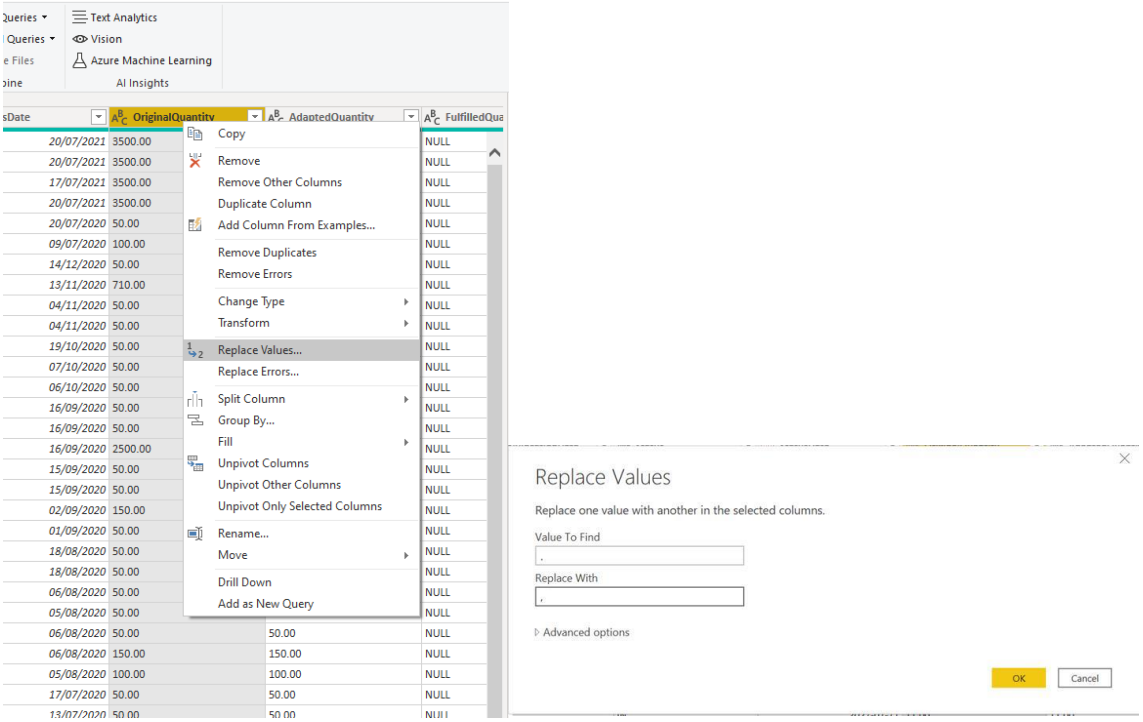


PLM_ID	OC_ID	LegacyOrderLineNumber	ExpectedAllocationDate	Status	StatusDate	OriginalQuantity	AdaptedQuantity	Fulfill
4336052	2	VO 1652948_1	NULL	IN	20/07/2021	50.00	50.00	NULL
4336052	3	VO 1652948_1	2022-04-18	CA	16/06/2021	280.00	280.00	NULL
4336052	3	VO 1652948_1	NULL	IN	23/12/2020	10.00	10.00	NULL
4336052	3	VO 1652948_1	NULL	IN	12/08/2020	10.00	10.00	NULL
4336052	3	VO 1652948_1	NULL	IN	05/10/2020	10.00	10.00	NULL
4336052	3	VO 1652948_5	2021-09-13	CA	17/12/2020	360.00	360.00	NULL
4336052	3	VO 1652948_4	2021-07-26	CA	17/12/2020	360.00	360.00	NULL
4336052	3	VO 1652948_3	2021-06-07	CA	17/12/2020	360.00	360.00	NULL
4336052	3	VO 1652948_2	2021-04-19	CA	17/12/2020	360.00	360.00	NULL
4336052	3	VO 1652948_1	2021-03-01	CA	17/12/2020	360.00	360.00	NULL
4336052	3	VO 1652948_1	NULL	IN	11/01/2021	10.00	10.00	NULL
4336052	2	VO 1652948_1	NULL	IN	25/09/2020	30.00	30.00	NULL
4336052	3	VO 1652948_1	NULL	IN	03/09/2021	10.00	10.00	NULL
4336052	3	VO 1652948_1	NULL	IN	13/09/2020	10.00	10.00	NULL
4336052	3	VO 1652948_1	NULL	IN	09/07/2020	10.00	10.00	NULL
4336052	3	VO 1652948_1	NULL	IN	15/04/2021	10.00	10.00	NULL
4336052	3	VO 1652948_1	NULL	IN	17/12/2020	40.00	40.00	NULL
4336052	3	VO 1652948_2	2021-08-09	CA	19/05/2021	350.00	350.00	NULL
4336052	3	VO 1652948_3	2021-09-27	CA	19/05/2021	350.00	350.00	NULL
4336052	3	VO 1652948_1	NULL	IN	08/04/2021	20.00	20.00	NULL

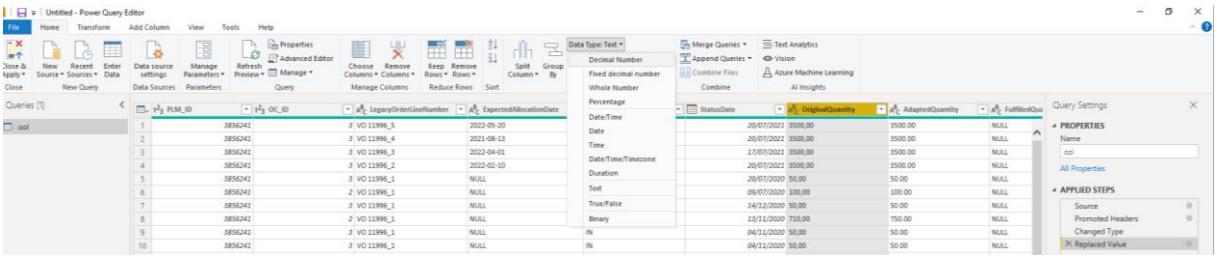
☑ Click on *'Transfrom Data'* to transform this data before using it. Power Query Editor will open in a new window.

As you can see, the dot is not recognized on my computer as a decimal separator so the column OriginalQuantity that contains numbers is interpreted as a Text. It may be different on your computer, depending on your computer location settings (US/EU/…). So on my computer, I will replace all dots by commas on OriginalQuantity column. I will not do it for AdaptedQuantity column where I have the same issue, because I do not intend to use it in this analysis.

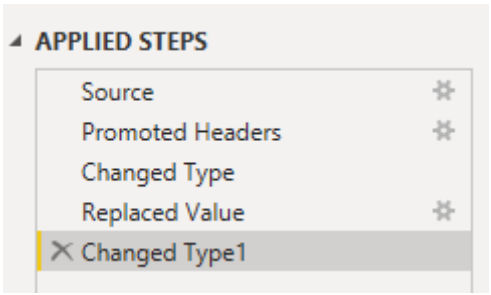
☑ Right click on the desired column and click on 'replace value'



☑ Once the above is performed, you can change the type of the column to 'decimal number' in the ribbon in "Data type".

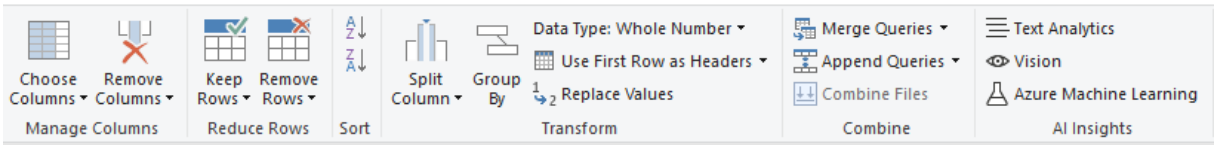


You can observe that on the right of the window, all our actions are sequenced and modifiable easily by clicking on the cog wheel.

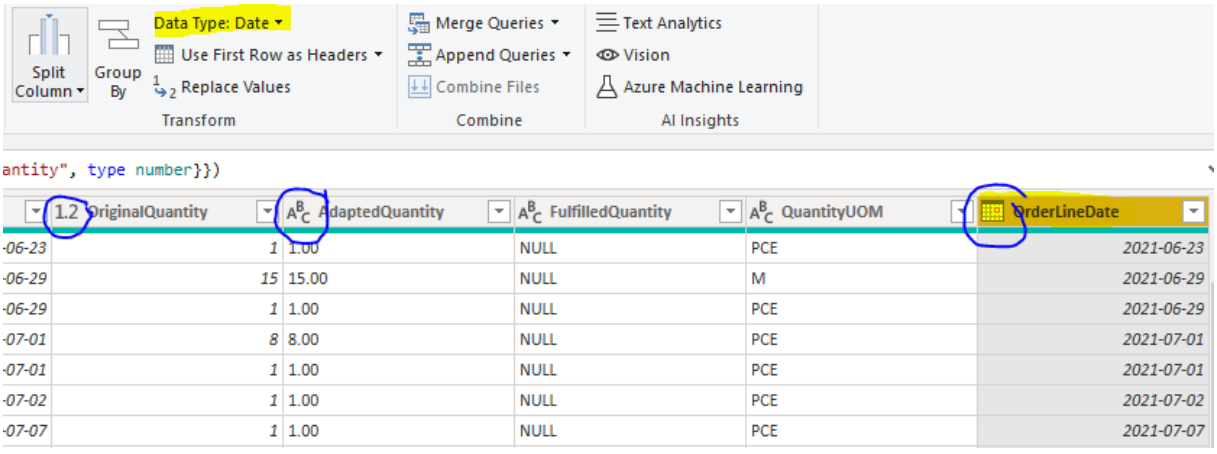


You can also do many transformations with the data. Check out the ribbon!

For example, you could remove columns that you de not need. See an example of this in the video (time 01:43-01:55).

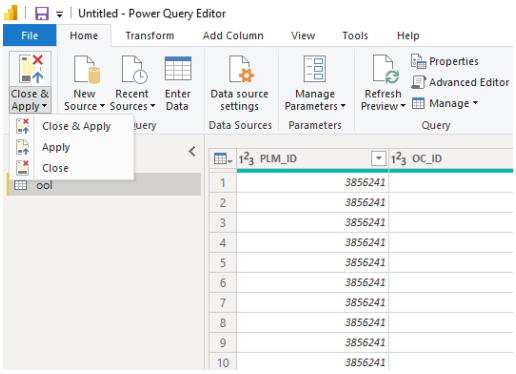


☑ Also let's make sure that column OrderLineDate is recognized as date. These small symbols in the headers showing data format are very handy. You can change data type in the ribbon in Transform=>"Data Type"



	1.2 OriginalQuantity	AdaptedQuantity	FulfilledQuantity	QuantityUOM	OrderLineDate
-06-23	1	1.00	NULL	PCE	2021-06-23
-06-29	15	15.00	NULL	M	2021-06-29
-06-29	1	1.00	NULL	PCE	2021-06-29
-07-01	8	8.00	NULL	PCE	2021-07-01
-07-01	1	1.00	NULL	PCE	2021-07-01
-07-02	1	1.00	NULL	PCE	2021-07-02
-07-07	1	1.00	NULL	PCE	2021-07-07

☑ Your data set is ready, click on 'close and apply'. This will close the transformation window and show the dashboard main page.

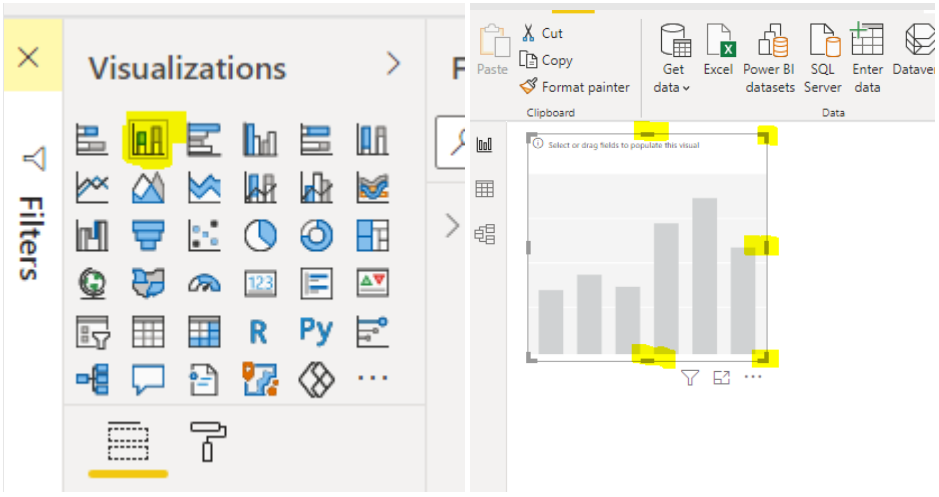


Visualization

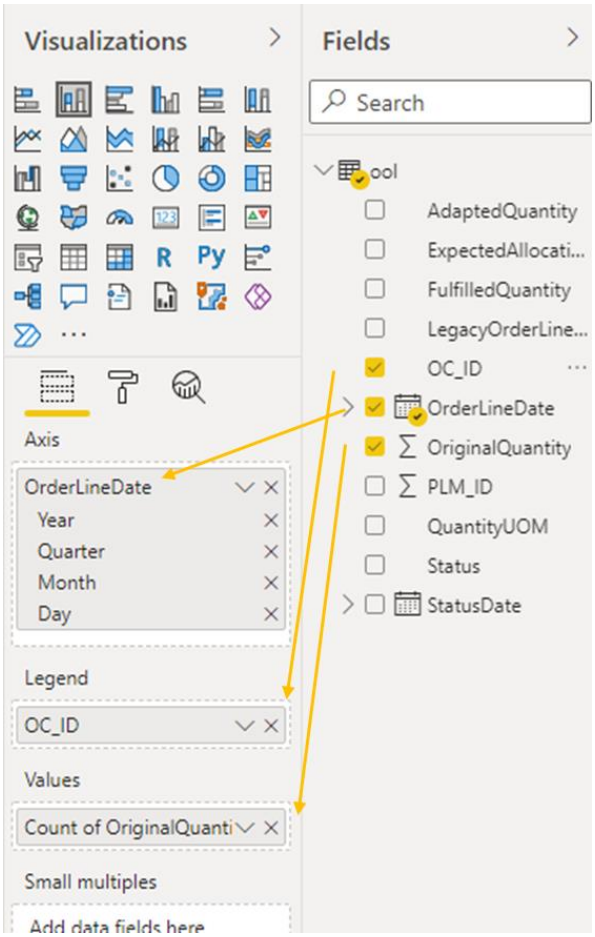
Video tutorial: 02:15-03:50

Let's create an order lines history chart by order class type.

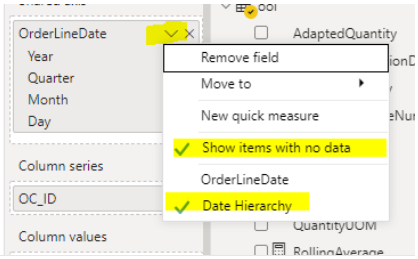
☑ First chose a proper visual to integrate in your dashboard: *stacked column chart*. A canvas should appear on the dashboard. You can reshape and move it to fit the window.



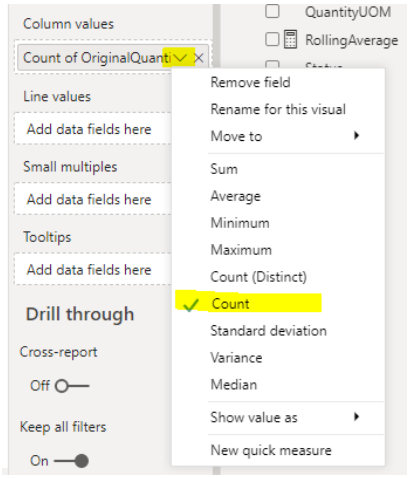
☑ Now drag and drop data from available fields into the visualization parameters as shown below:



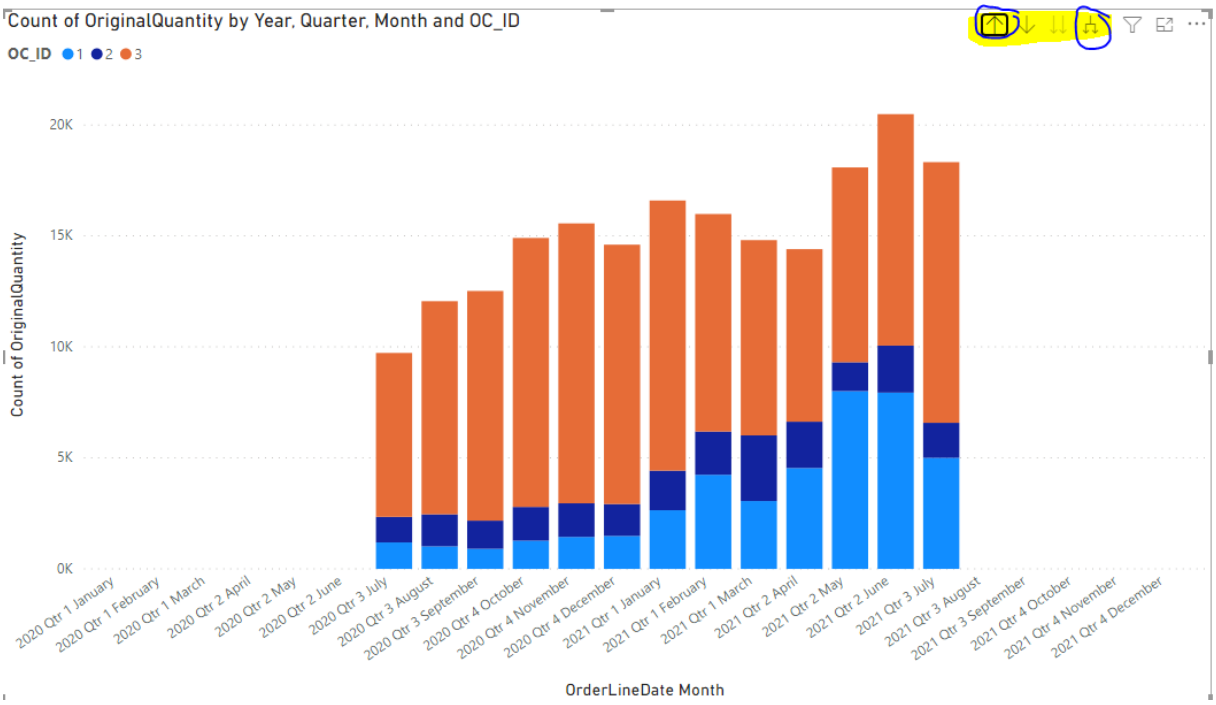
☑ For the dates, make them explicit and plot as a time series (all dates shown)



☑ Add in the *'columns values'* the COUNT of order lines.



You can now visualize your lines. Play with the date hierarchy using the arrows at the top right of the chart canvas.



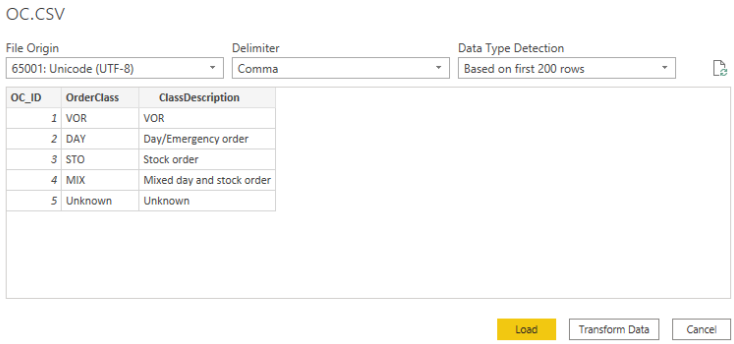
Create relationship between tables

Video tutorial: 03:50-05:20

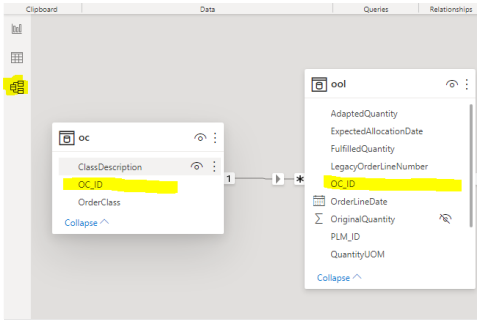
The order class is not very readable: is says 1, 2 and 3. We can load the 'oc' table to map the OC_ID to order class description (e.g. to have "VOR" instead of 1, and "Stock order" instead of 3)*:*

	OC_ID	OrderClass	ClassDescription
1	1	VOR	VOR
2	2	DAY	Day/Emergency order
3	3	STO	Stock order
4	4	MIX	Mixed day and stock order
5	5	Unknown	Unknown

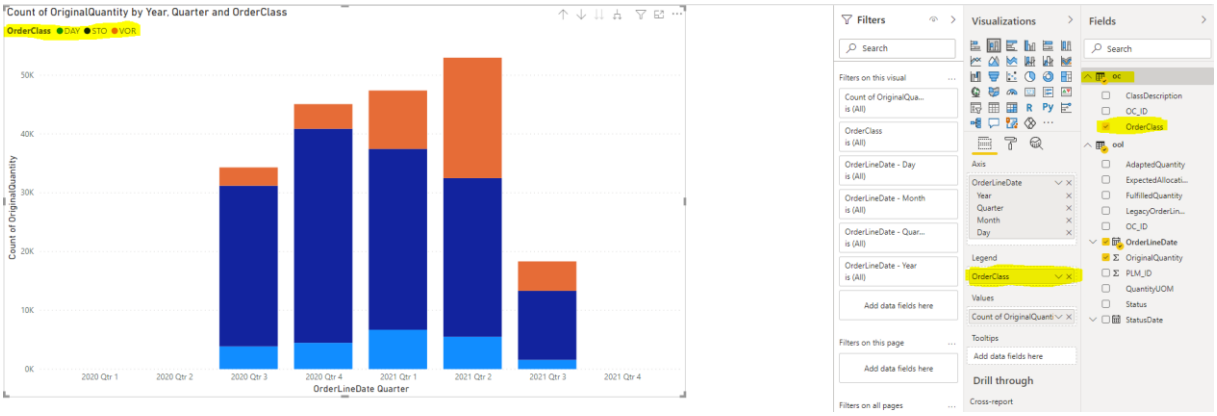
☑ Load 'oc.csv' file that you have saved on your computer in the beginning of the exercise. Follow same steps as with ool.csv file: Get Data => Text/CSV. This time you do not need to transform the data. So just click Load.



☑ Once it is done, you should click on the 3rd icon on the left vertical bar to see how Power BI has understood the relation between the 2 tables. The relationship is auto detected, since both tables had column OC_ID that is used as a key to connect them. In the next week tutorial, we will look more into relationships between tables!



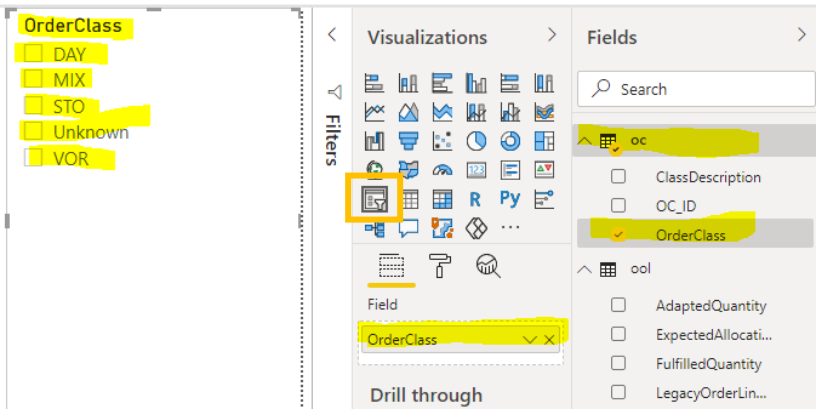
☑ Replace 'OC_ID' field by 'OrderClass' or 'ClassDescription' field from the 'oc' table.



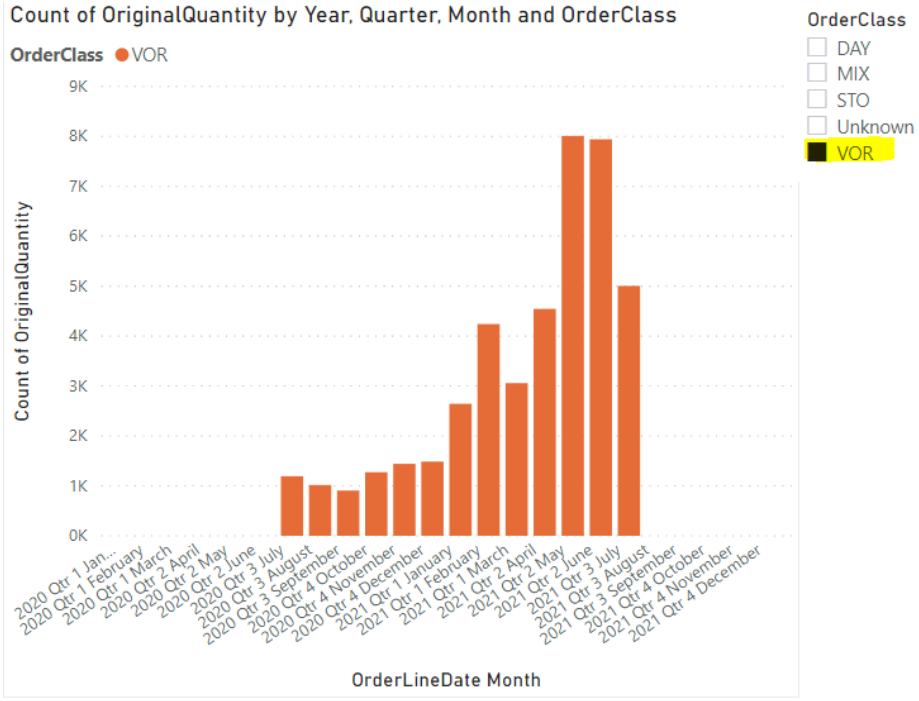
Now we would like to visualize only the VOR so we are going to build a select button/slicer to choose the order class.

☑ Add a '*Slicer*' visualization. Careful !! unselect any existing visualizations on the dashboard otherwise you may change them. A video tutorial demonstrates an example of such mistake and how to avoid it (time 05:20-06:25).

☑ Add 'OrderClass' in the Field.



We can now have a look at a specific order type.



You are done with this exercise! Save your Power BI file, we will continue using it in next week's exercise. Finalize this week's Technical Learning by submitting your answers on the Booster Sharepoint site.