10_FAQs on developing dashboards

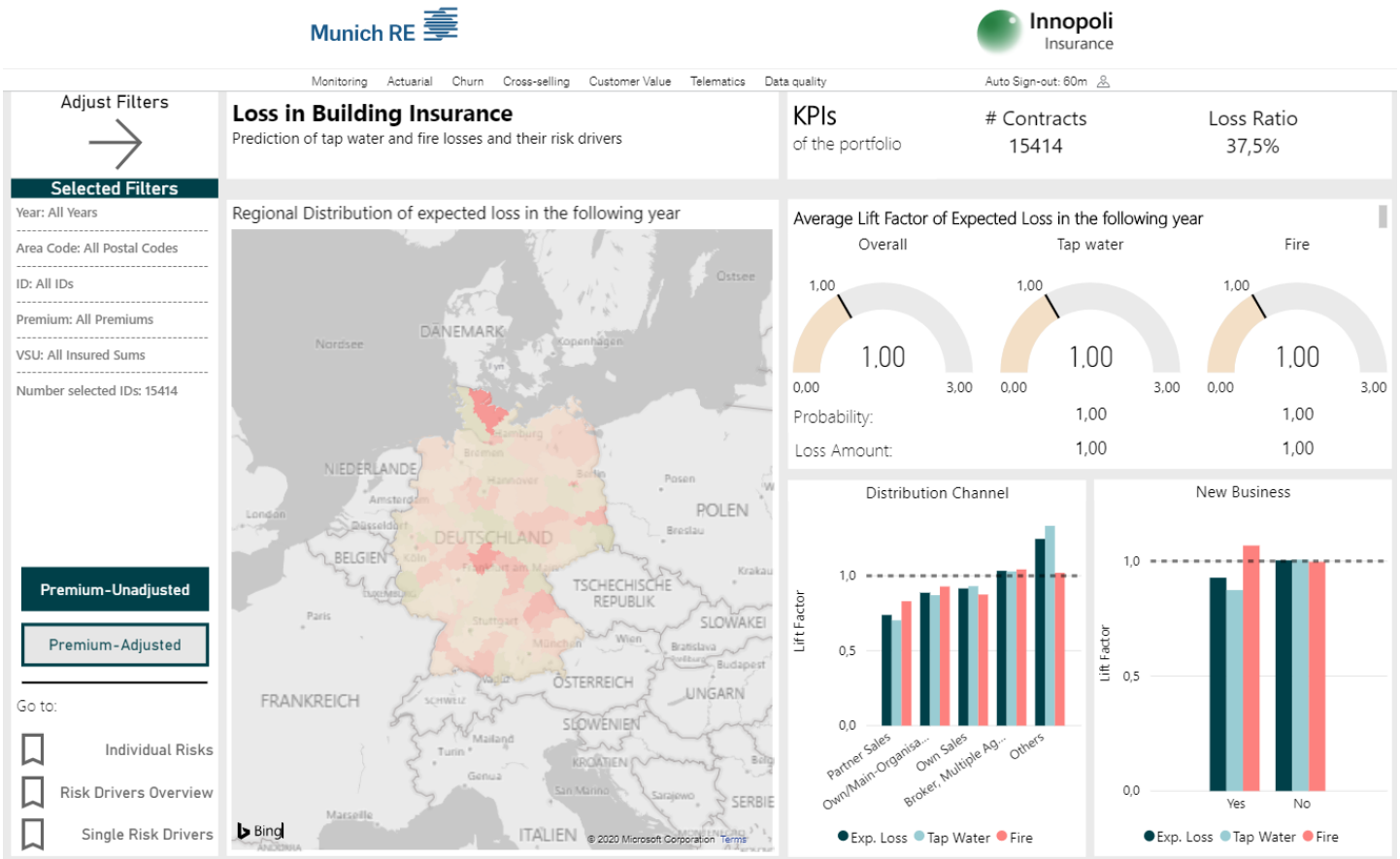
Last updated by | Matthias Duschl | 4. März 2020 at 06:50 MEZ

Contents

Here are some frequent technical solutions for building PowerBI dashboards

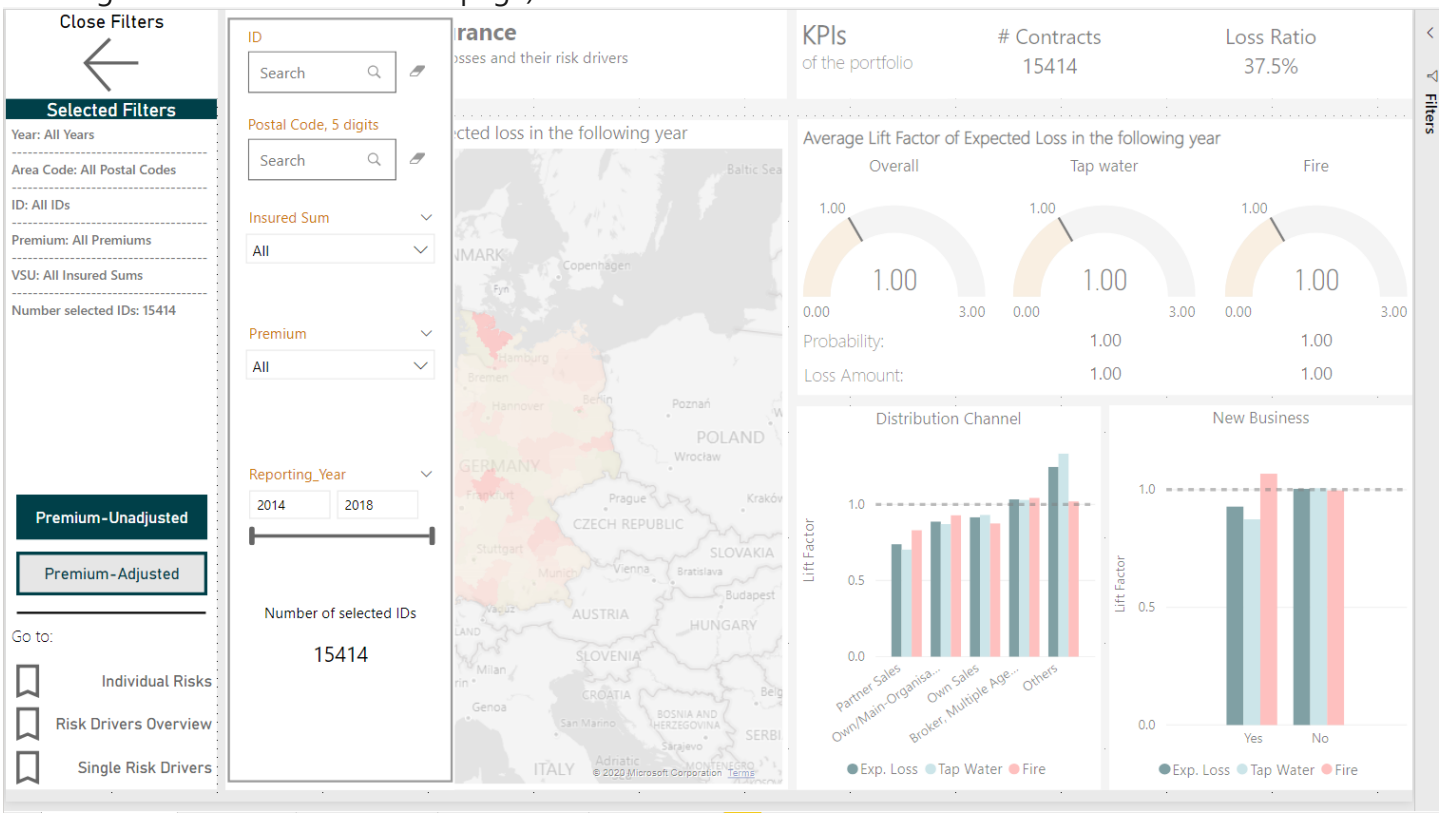
Modern Custom Filter Pane

Like the one in the screenshot below on the left.



This custom filter on the screenshot is actually a text wrapper showing dynamic values. The way it works is by using several measures which on the background check based on which variables we are currently filtering.

By clicking the Adjust Filters button on the top-left we get to a subpage (the button is just a bookmark showing a different version of this page) which looks as follows:



Where we get the actual slicers/text filters which we can use to select which data we want to see.
Clicking on the Close Filters button on the top-left, we get back to the original page, but with the already filtered values.

Alternatively we can also use the default power-bi filter pane on the right to perform filtering&slicing.

Now to the more technical part with the underlying measures and scripts in the background:
First we need to create a Measure that we name DisplayCount, in this measure we only decide how many separate values do we want to see in the dynamic text wrapper before having : & others..., we selected 5 in this case (see example below, we selected more than 5 distinct values, but only 5 are shown and the rest is under & others...)

VSU: 250k - 500k Euro, 500k - 1M Euro, 100k - 250k Euro, 50k - 100k Euro, 25k - 50k Euro & others...

Code:

```
DisplayCount = 5
```

Another measure we need to define is a Separator, which only has a specific amount of : "-" which separate the filtered values in the dynamic text wrapper.
Code:

```
Separator = "-----------------------------------"
```

Adjust the number of "-" based on the width of the left filter pane used.

The measure that actually visualizes our filtered values is called Dummy Slicer Selection Measure in our case, and is the following one:

```
Dummy Slicer Selection Measure =
IF([SelectedYear]="","","Jahr: "&[SelectedYear]&[Separator])
&IF([SelectedPLZ]="","","PLZ: "&[SelectedPLZ]&[Separator])
&IF([SelectedID]="","","ID: "&[SelectedID]&[Separator])
&IF([SelectedBeitrag]="","","Beitrag: "&[SelectedBeitrag]&[Separator])
&IF([SelectedVSU]="","","VSU: "&[SelectedVSU]&[Separator])
&"Anzahl IDs: "&[SelectedCountID]
```

Moving now to the actual measures controlling what is happening in the background, below are several examples for different variable types.
Here is an example for a categorical variable:

```
SelectedBeitrag =
VAR SelectedValues = DISTINCT(vgv_model_data_full[Beitrag_kat])
VAR NumberOfSelectedValues = COUNTROWS(SelectedValues)
VAR IsColFiltered = IF(NumberOfSelectedValues<=1,TRUE(),ISFILTERED(vgv_model_data_full[Beitrag_kat]))
VAR TheValues = TOPN([DisplayCount],SelectedValues)
VAR ListOfValues = CONCATENATEX(TheValues,vgv_model_data_full[Beitrag_kat],", ")
VAR ListValuesToDisplay = IF(IsColFiltered,ListOfValues&IF(NumberOfSelectedValues>[DisplayCount]," & andere
RETURN
ListValuesToDisplay
```

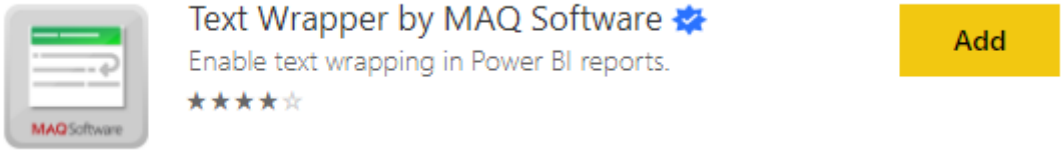
Here is one just for displaying the number of distinct values in our selection (we used it to show the number of selected IDs):

```
SelectedCountID =
VAR SelectedValues = DISTINCT(vgv_model_data_full[ID])
VAR NumberOfSelectedValues = COUNTROWS(SelectedValues)
RETURN
NumberOfSelectedValues
```

And here one for displaying Years (or in general numerical/ordinal values):

```
SelectedYear =
VAR IsColFiltered = ISFILTERED(vgv_model_data_full[Berichts_Jahr])
VAR MinYear = CALCULATE(MIN(vgv_model_data_full[Berichts_Jahr]))
VAR MaxYear = CALCULATE(MAX(vgv_model_data_full[Berichts_Jahr]))
VAR ListValuesToDisplay = IF(IsColFiltered,MinYear&"-"&MaxYear,"Alle Jahre")
RETURN
ListValuesToDisplay
```

Finally we have to import a visual from the marketplace:



And just drag the Dummy Slicer Selection Measure into the Visual.

A Demo Dashboard which includes this solution can be found and tested in the Innopoli platform under: Actuarial->HomeOwner Portfolio Analysis.

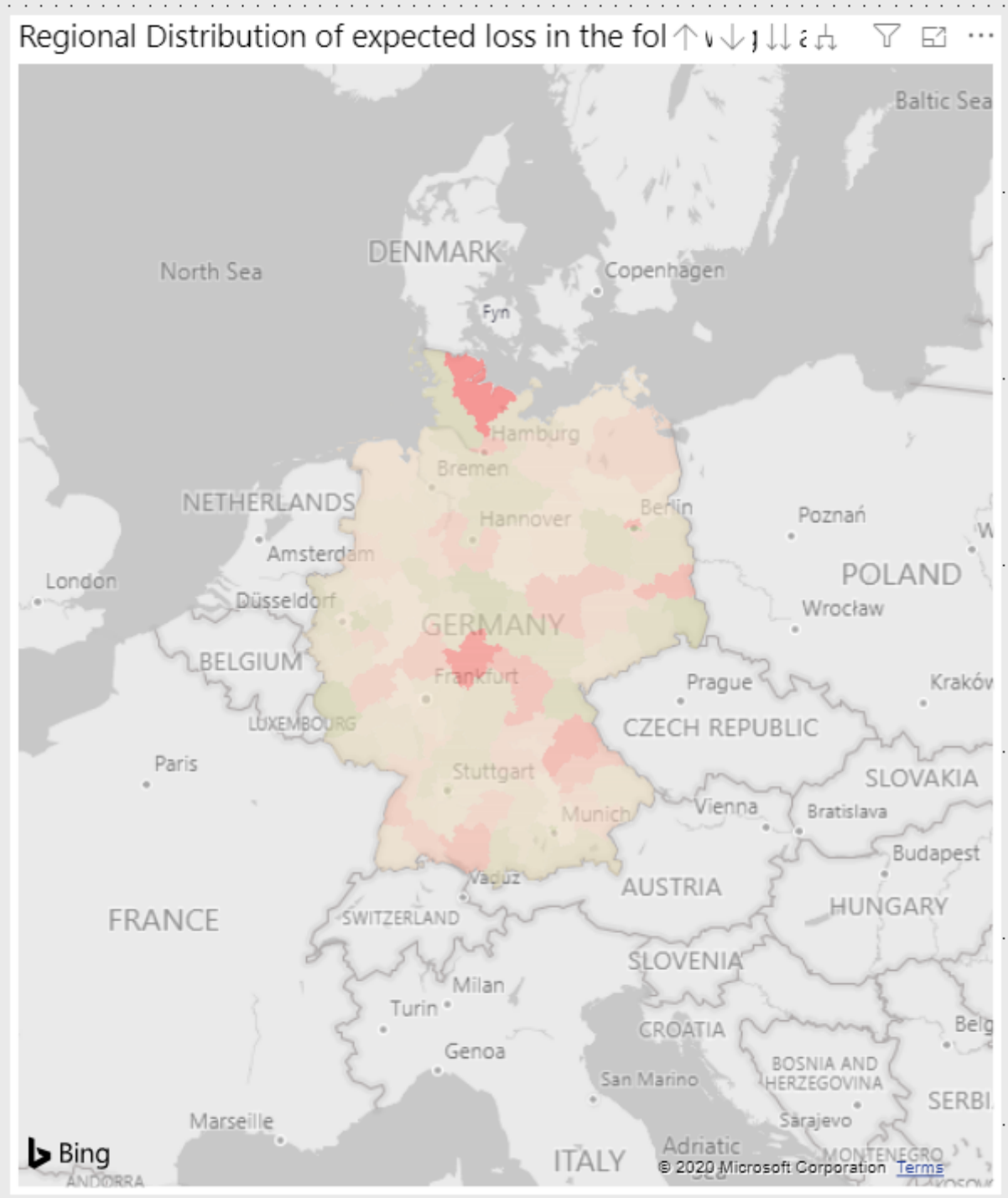
Remarks:
When filtering for example Years (or in general any value where we display the min. value - max. value) we

have to make sure that we have the appropriate filter, e.g. if we filter by a slicer we can also just show a range of years like 2016-2018, but if we have a dropdown selection of years where we can also select non-consecutive years, we have to display them as separate years since a range would miss out the not included years in between.

Shape Maps in Power BI Desktop

Microsoft instruction

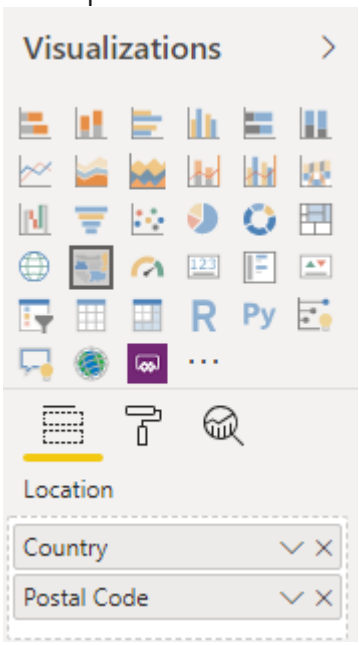
To create a Shape map like the one below where we can drill down to different regions (or countries if we have multiple), our dataset has to include a column “Country” and “Postal Code”, and their Data Category has to be changed in the Modeling tab to Country/Region and Postal Code respectively. (Please note that e.g. for Germany we also have to change the Data Type of the Postal Code to text, because otherwise the leading digit 0 in some postal codes would get lost and therefore not visualized on the map. If some of the German postal codes are missing the leading 0 an easy way to add it is to add a 0 as a prefix to the whole column and then extract the last 5 digits).



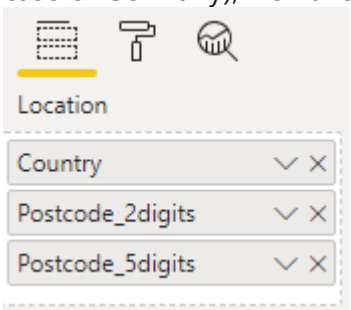
Example dataset (used in the Demo file) including Postal Code and Country

	Postal Code	Country
1	EC1R	United Kingdom
2	EC3N	United Kingdom
3	EC4M	United Kingdom
4	CB23	United Kingdom
5	CB21	United Kingdom
6	49196	Germany
7	31542	Germany
8	38154	Germany
9	80802	Germany
10	83101	Slovakia
11	040 01	Slovakia
12	8001	Switzerland
13	1202	Switzerland
14	7500	Switzerland

After changing the Data Category we can already drag the Country and Postal Code fields to our visual like in the picture below.



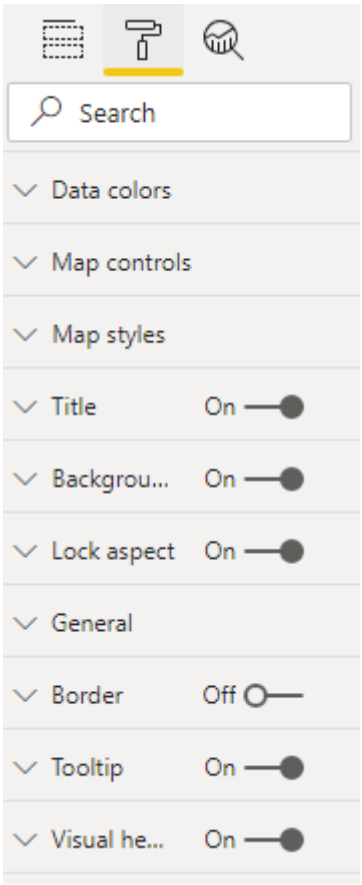
In the case where we want to have a split on a regional and then local level (5 and 2 digit postal codes in the case of Germany), we have to drag the fields in the order of the hierarchy we want to have.



Other settings can be changed and adjusted in the second tab of the visual, and here are some we used for our Aqualytix dashboard:

1. Map Styles – In our opinion Grayscale looks the best

2. Data Colors – to visualize values on the map (the picture above), we tested several colors, and this one looked the best to us:
   Green: *649A23*
   Middle color(Diverging scale): *F3DFC6*
   Red color: *FD625E*



Good sites for choosing colors for visuals:
http://colorbrewer2.org/
https://gka.github.io/palettes/

There are also some limitations of this visual, like the maximal number of “shapes” shown at one moment, but in general it is a ready to use visual since we don’t need to provide shape files (topojson polygons) to get the desired shapes, this is all done by the bing maps and works quite well.
Further info on the Microsoft page on these limitations and this visual in general:
https://docs.microsoft.com/de-de/power-bi/visuals/desktop-shape-map

Please have also a look at the ShapeMapDemo.pbix file in the Analytics Platform onboarding - PowerBI Resources file which contains a Demo of these ShapeMaps with several countries included.

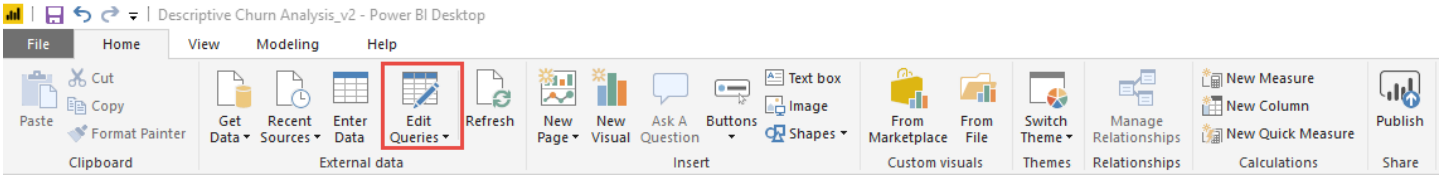
One last advice for users navigating in the map, there are two options on how to navigate and drill up and down in the hierarchy:

1. We can either be in the DrillDown mode by clicking the down arrow on the top right of the visual, and in this case when clicking on a specific region we dive one level down in the hierarchy. To exit this drilldown mode just click on the down arrow again and you are back in the "normal" mode
2. The second option is that we can be in the "normal" mode, when by clicking on a region we "filter" by that region, and when wanting to drilldown further in the hierarchy we have to click with the left-mouse button and select Drill Down

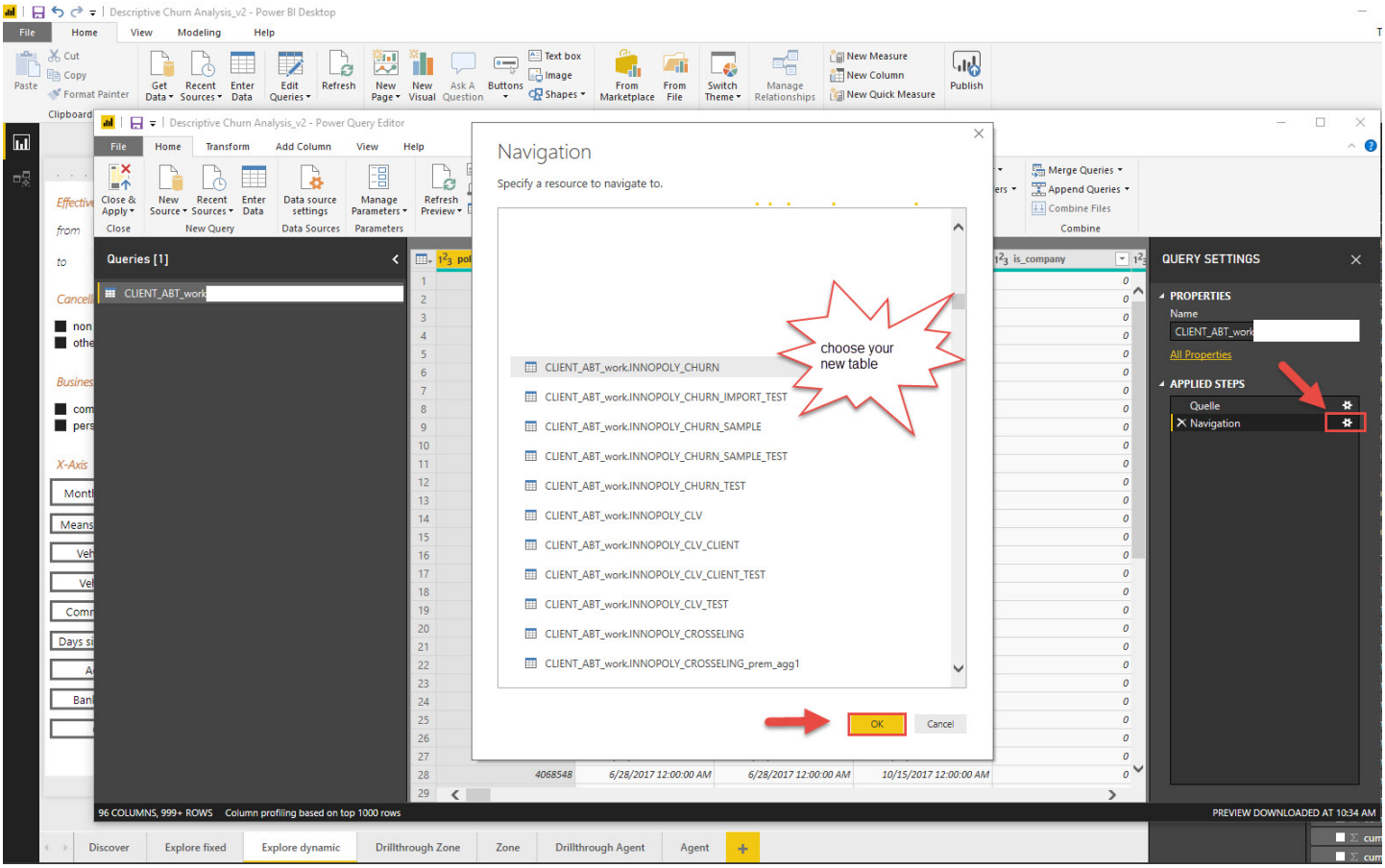
Returning to the highest level of the hierarchy is either possible by clicking on the up-arrow, or by clicking the left mouse button and selecting Drill Up.

Update Query in Power BI Desktop

- Click on **Edit Queries**

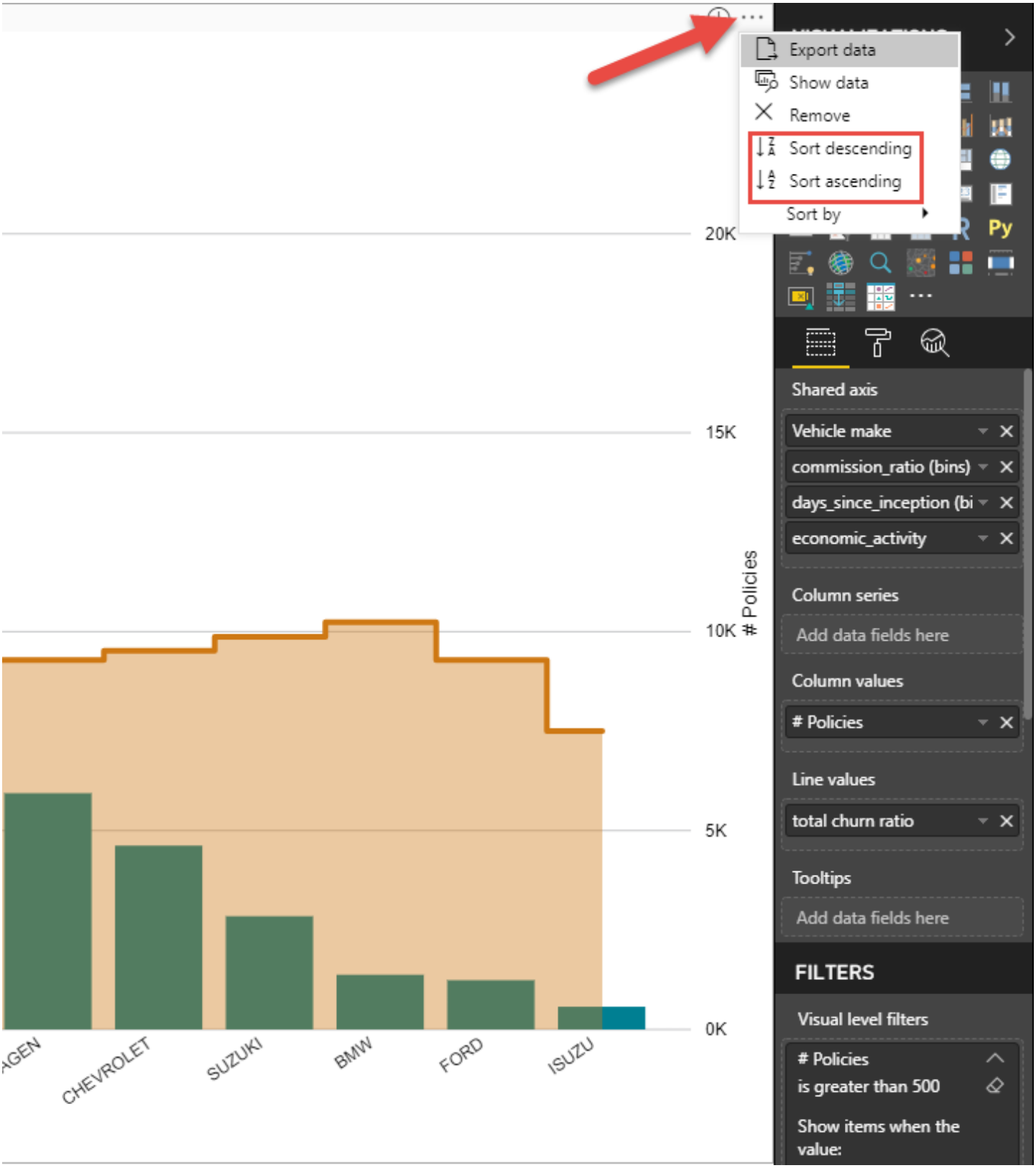


- Next, click on the Wheel icon next to Navigation (see below photo).
- Choose your new table then click on OK.



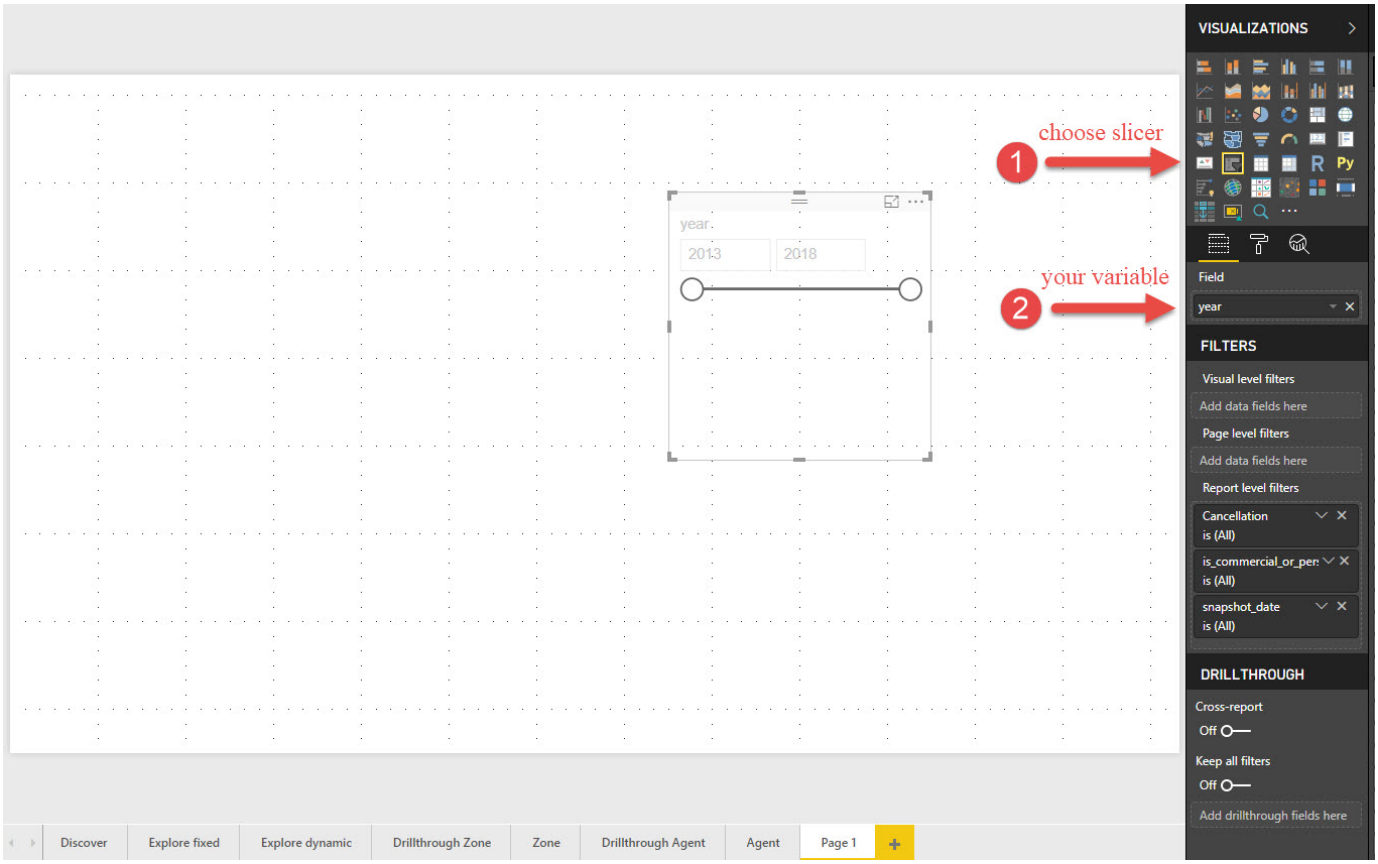
Sort data from A -> Z or from Z -> A

- Click on the 3 dot from the right side of the grafic and choose the way you want to sort your data.

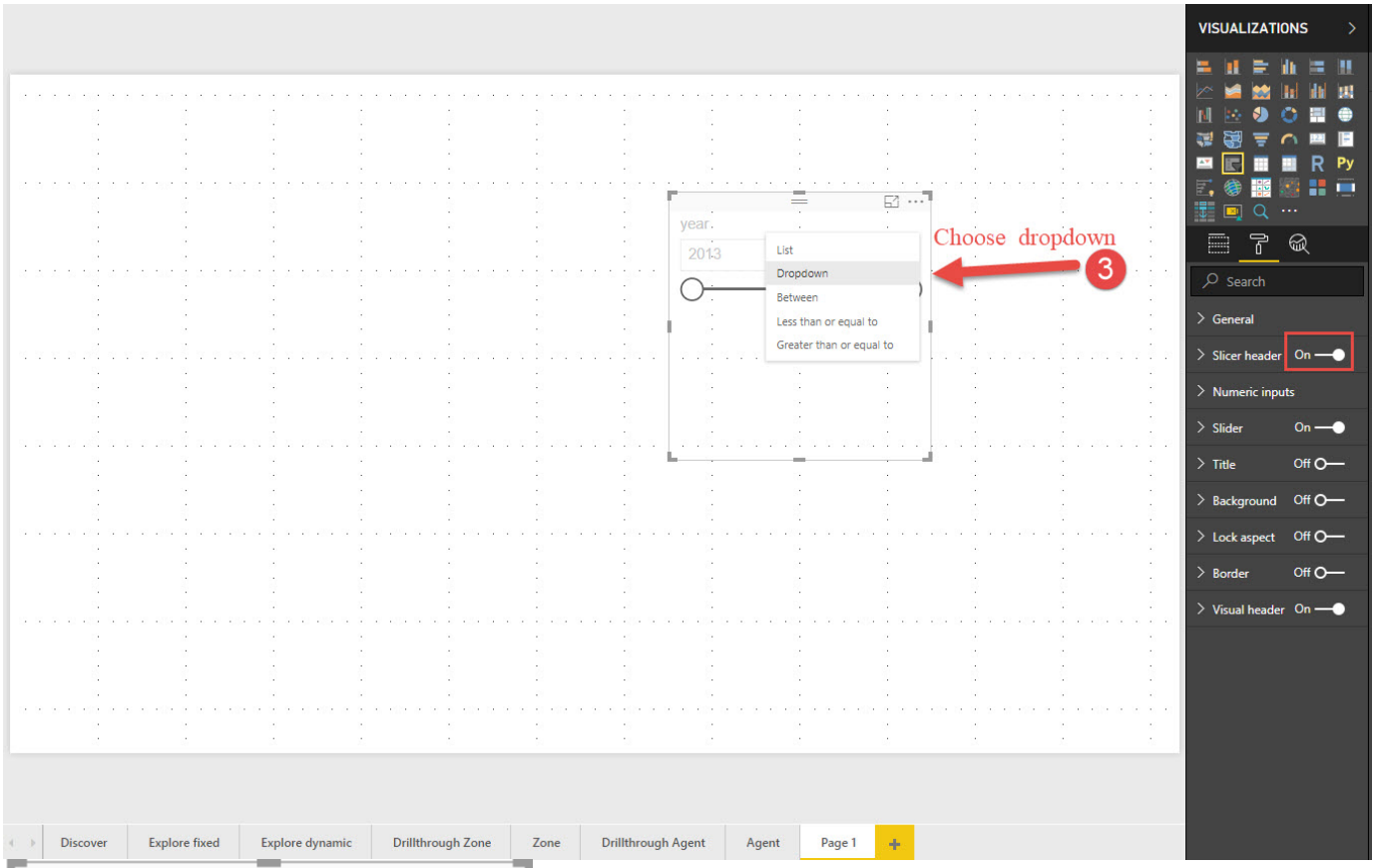


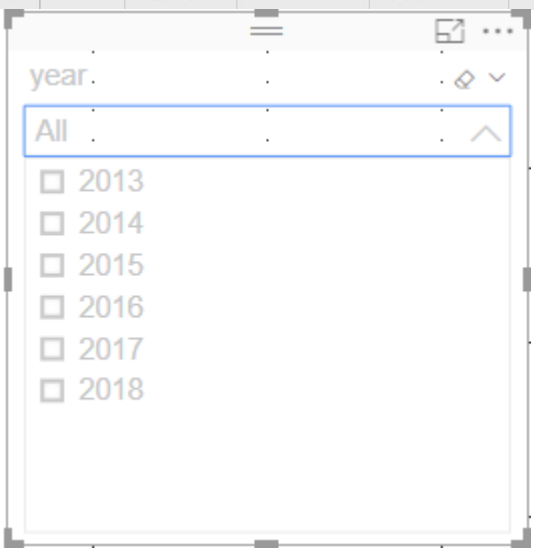
Slicer dropdown

- To create a dropdown list in Power BI dashboard, what you need to do is choose a slicer and its variable.



- Turn on the Slicer header (usually it's ON when you first chose the slicer)
- Move your mouse to the upper right of the slicer and click on the down arrow. You will see Dropdown, choose it. Now you are having your wanted dropdown list. Enjoy.



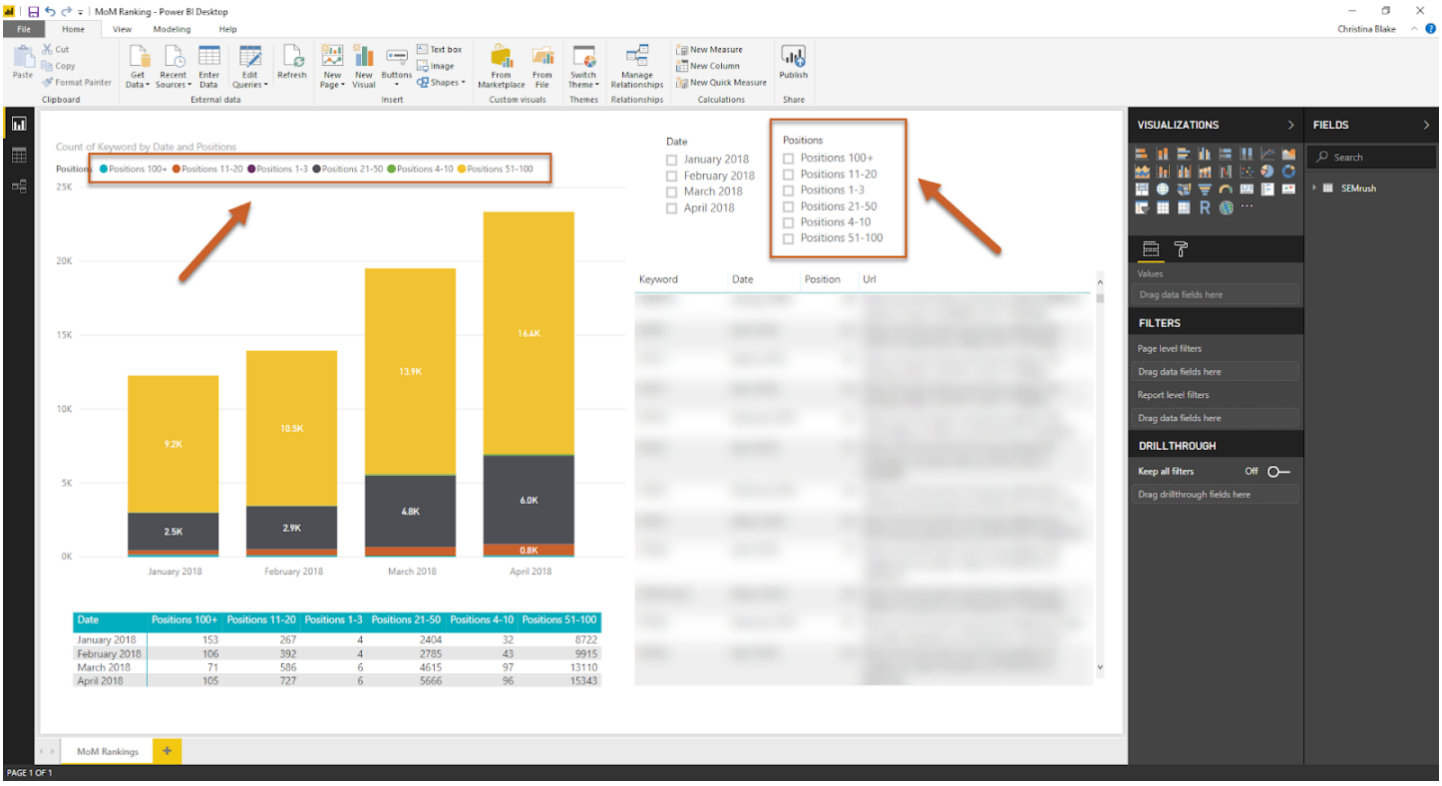


How to modify the legend order or visual order in Power BI

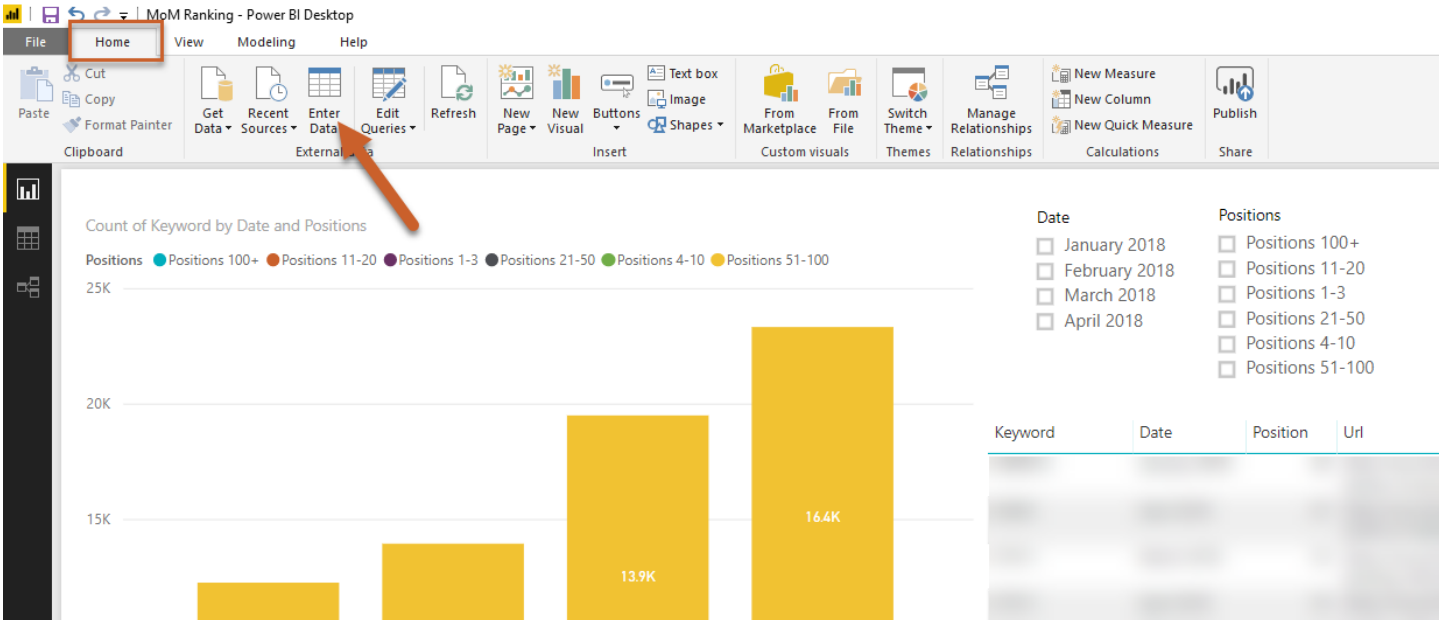
For this example, we're using a bar chart with MoM keyword rankings grouped by positions. We've grouped keyword rankings into the following position groups:

Positions 1-3
Positions 4-10
Positions 11-20
Positions 21-50
Positions 51-100

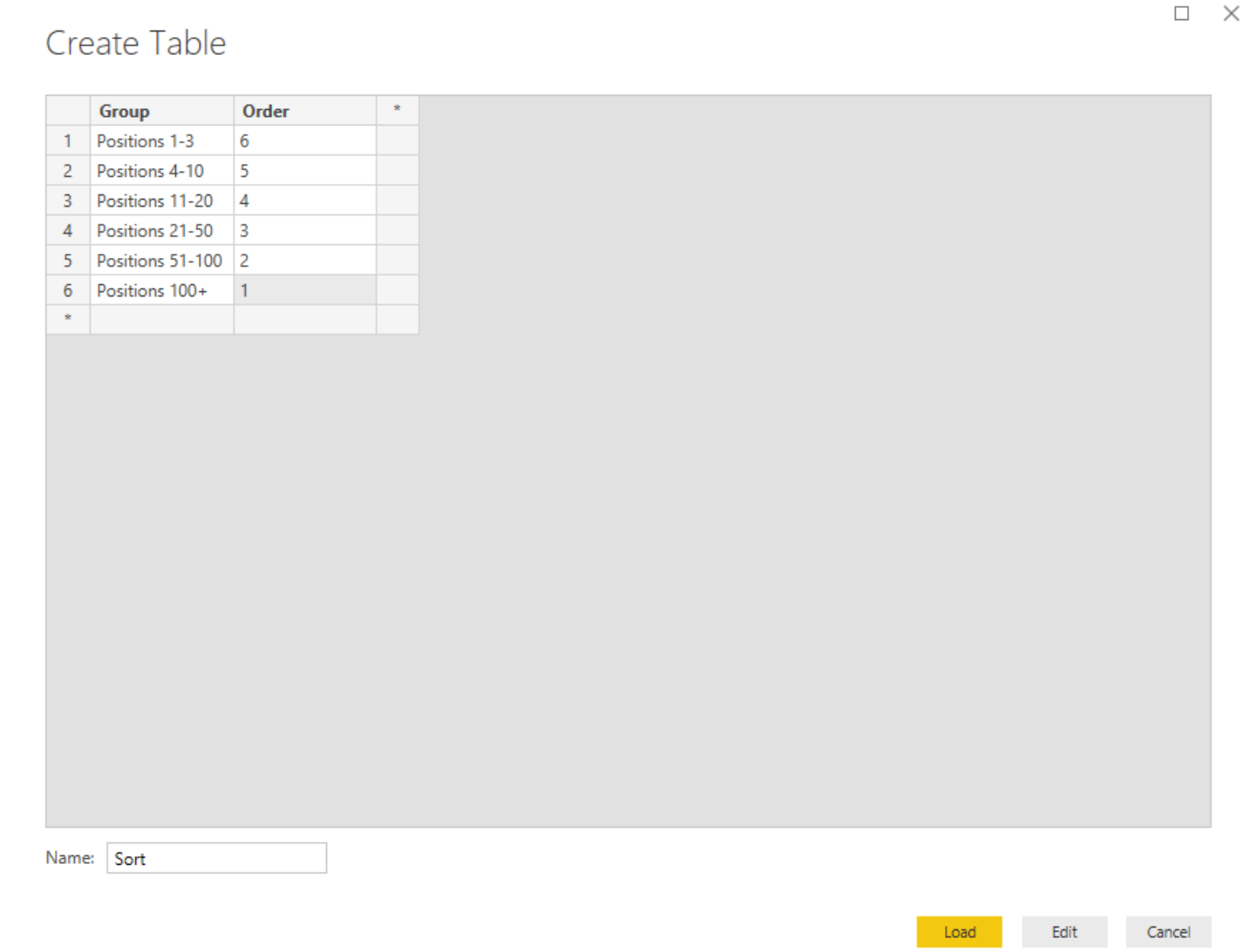
In the example, the positions are out of order—this results in the stacked bar chart showing positions 100+ at the bottom, then 11-20, then 1-3, then 21-50, then 4-10, and finally 51-100 at the top. Not ideal.



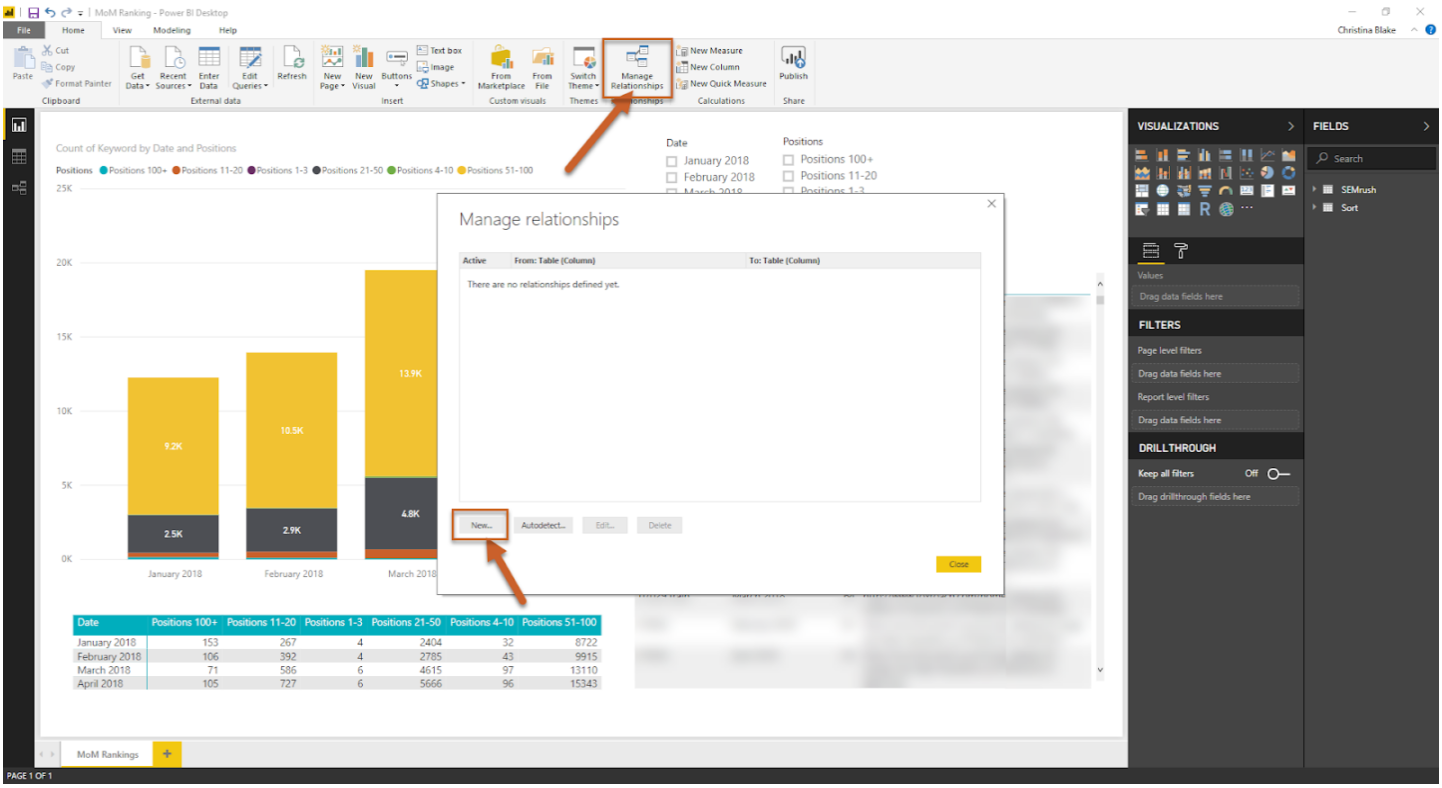
1/ Create a new table with your sort order
Create a simple table with two columns by selecting the enter data icon under the home tab.

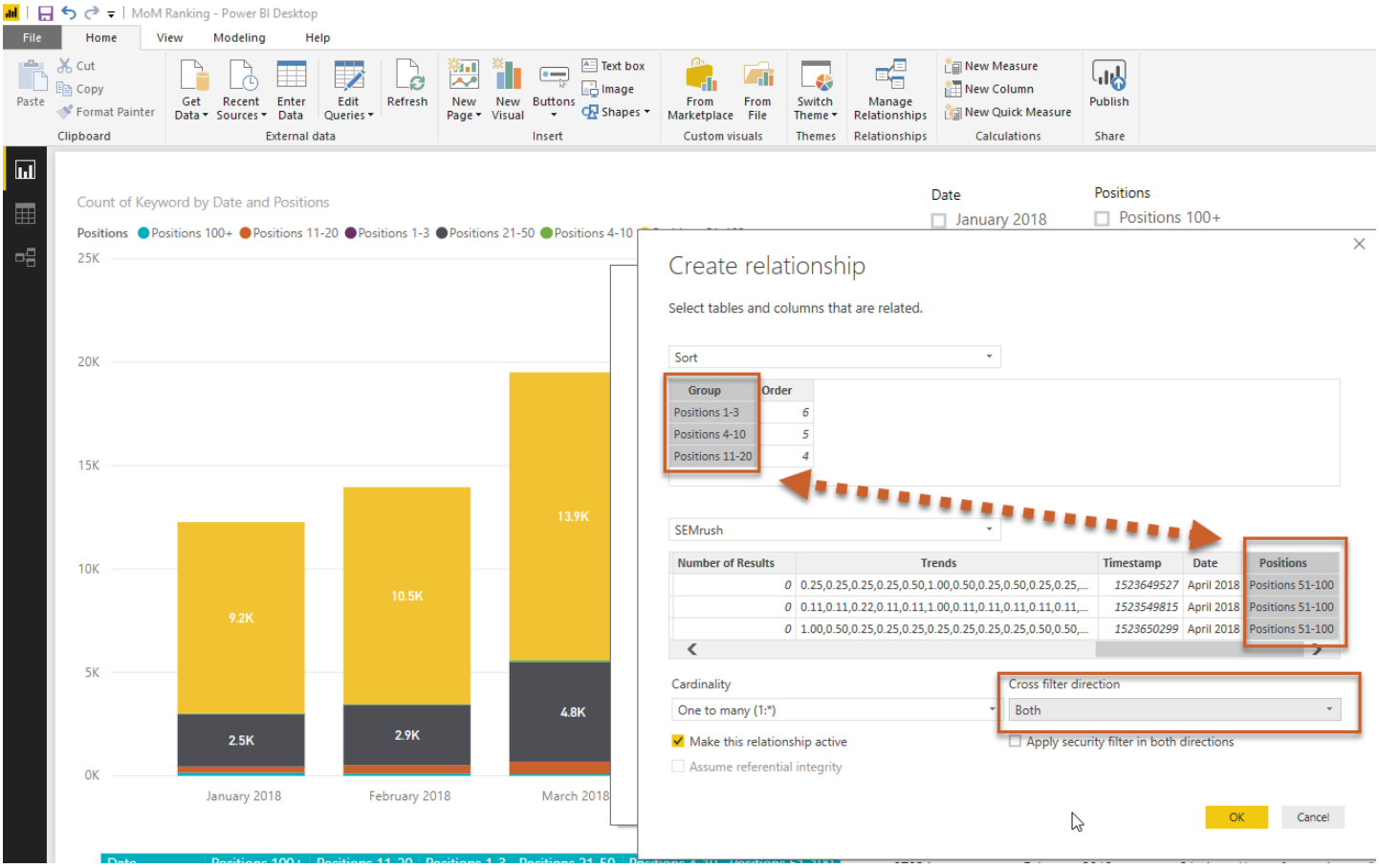


In one column (example: “Group”), include the groups you want to sort, making sure to enter the groups exactly as written (case-sensitive). In the second column (example: “Order”), add numbers to designate your sort order. For a bar chart, these numbers will be “backwards”, so that 100+ will be at the bottom and 1-3 will be at the top.

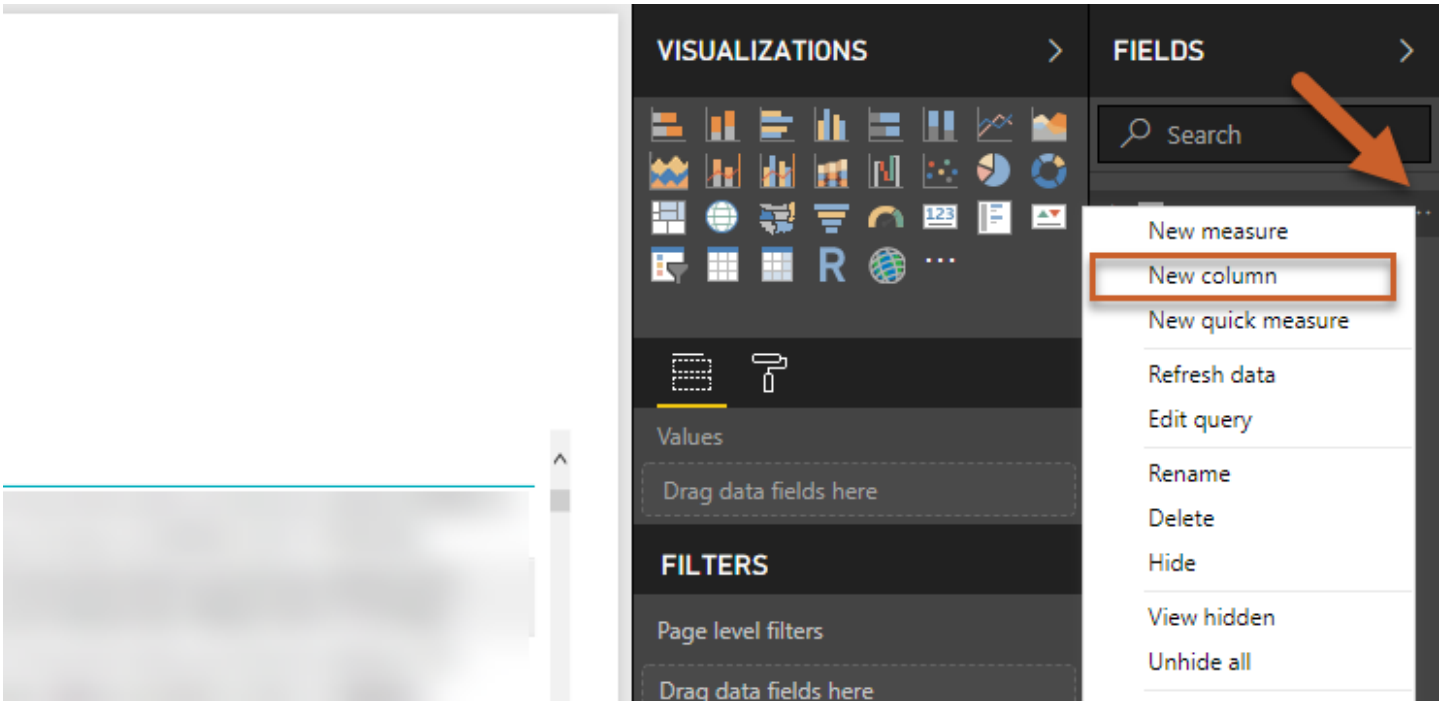


2/ Create a relationship between the new table and your data
Select manage relationships and create a relationship between the new table and the original table.

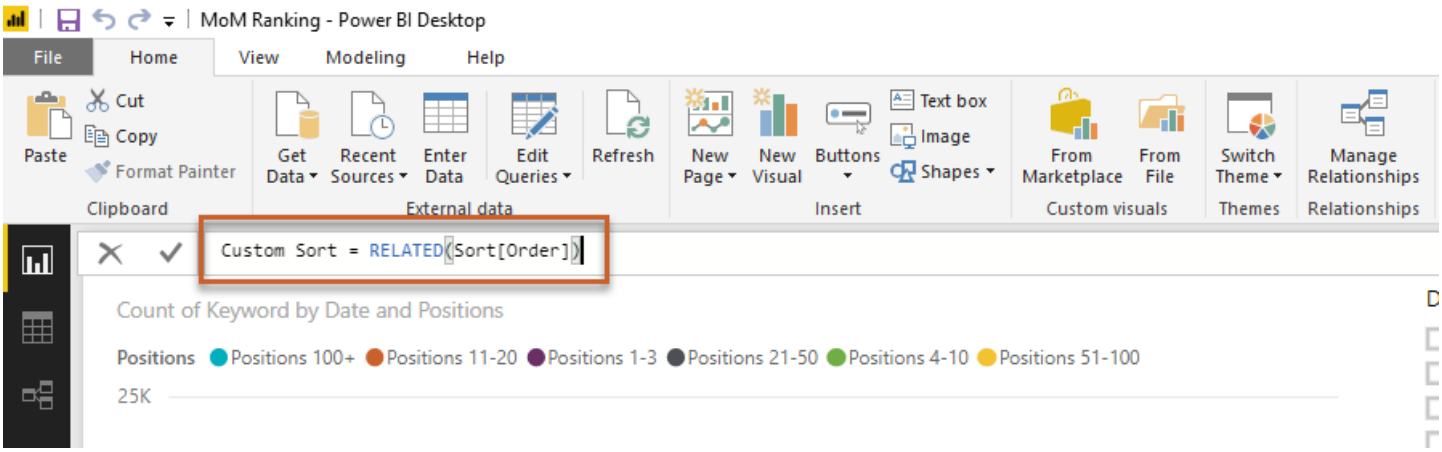




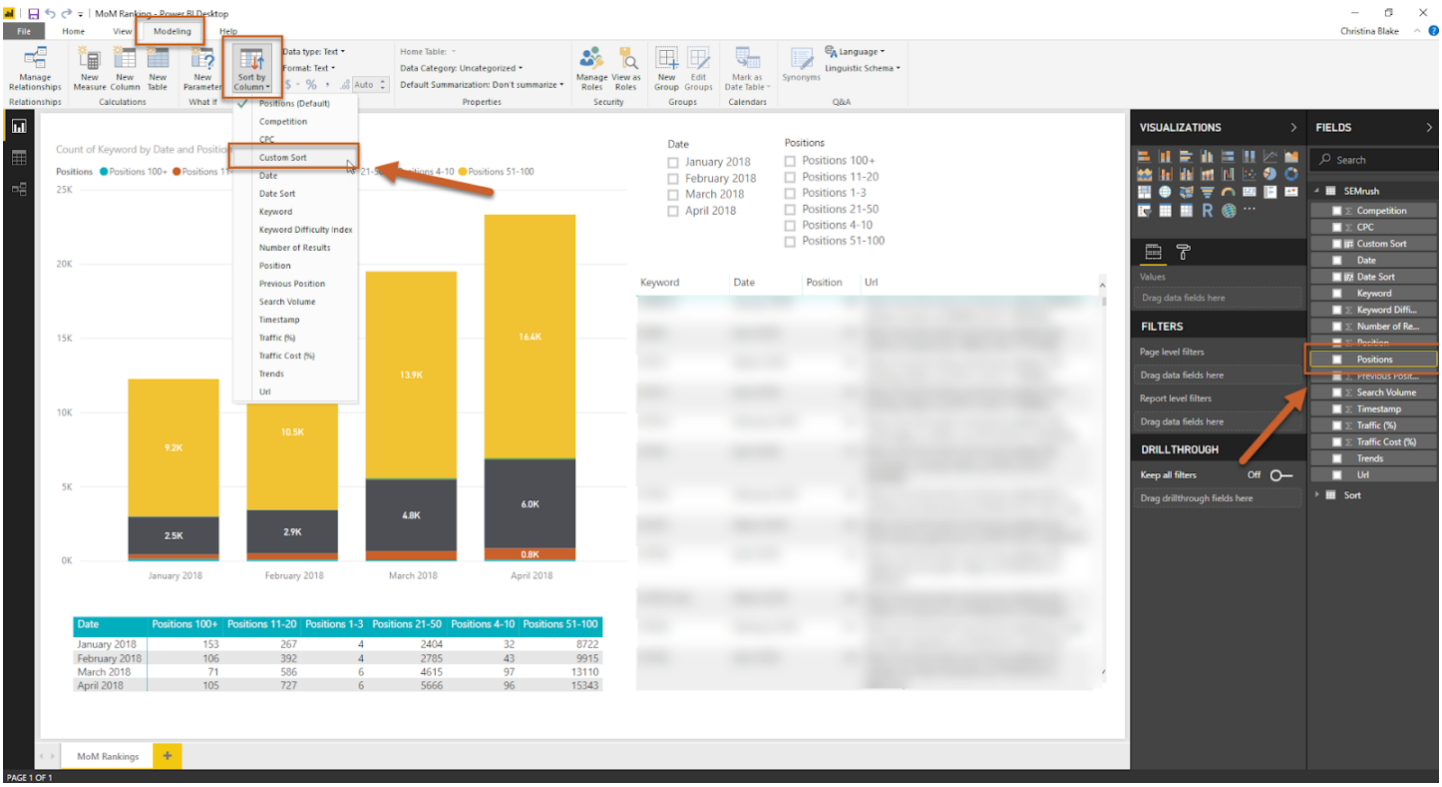
3/ Use the DAX related function to create a sort order
In the original table, create a custom column by right clicking on the ellipses to the right of the original table and selecting new column.



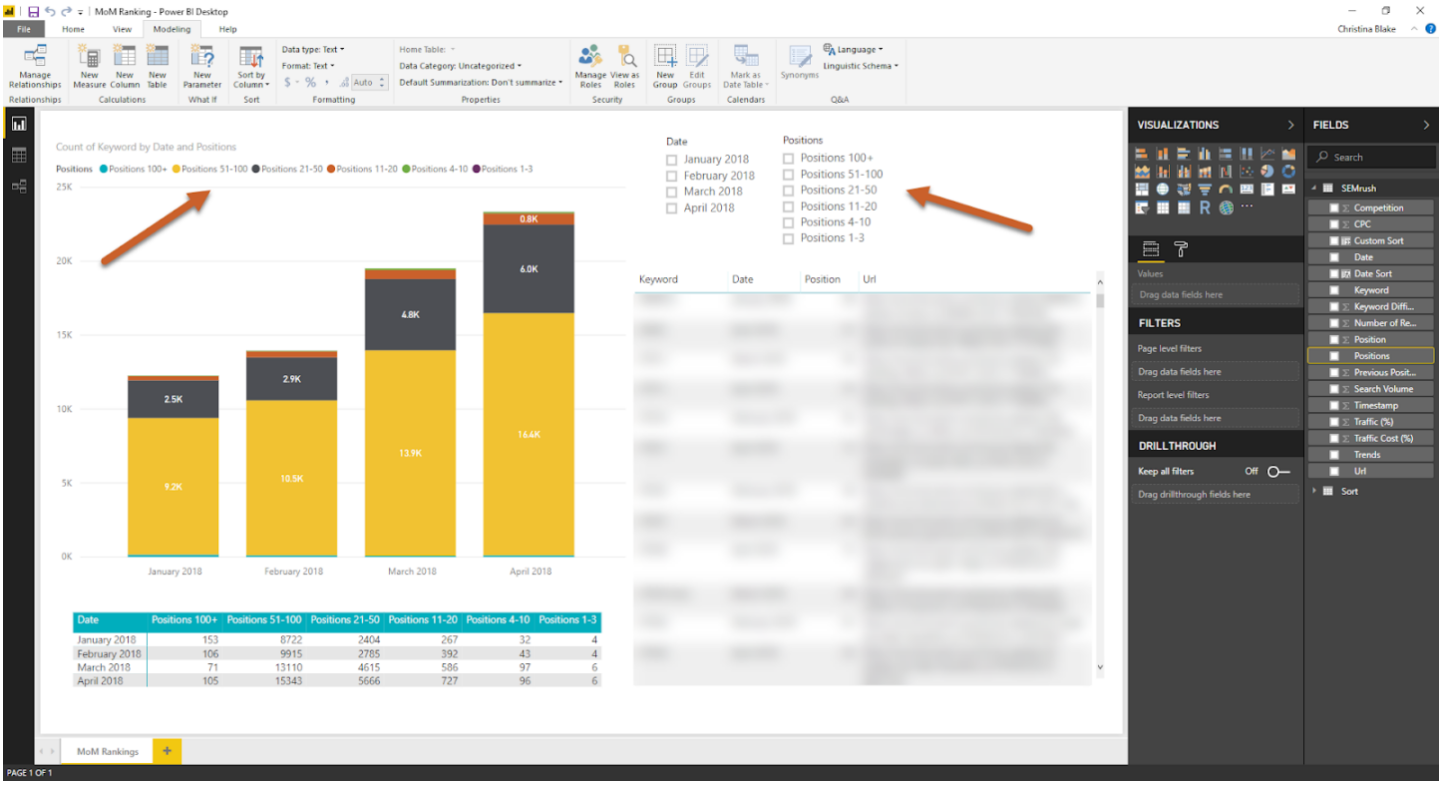
Use the DAX function Custom Column = **RELATED**(Table[Column]). For this example, the formula should look like “Custom Sort = RELATED(Sort[Order])”.



4/ Sort your column by your custom sort order
Select the column you want to sort with your custom order (for this example, “Positions”) and select sort by column under the modeling tab, select the name of your custom column (in this example, “Custom Sort”).



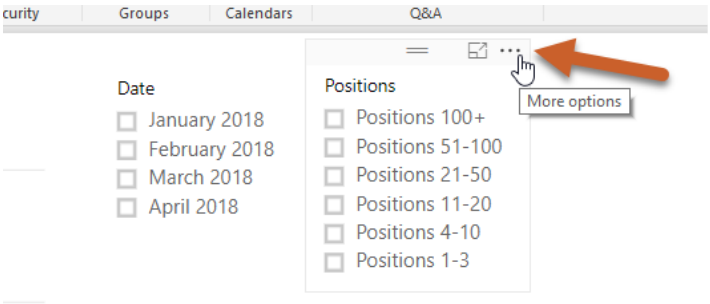
You’re done! The bar chart is now organized with highest ranking positions at the top and lowest at the bottom.

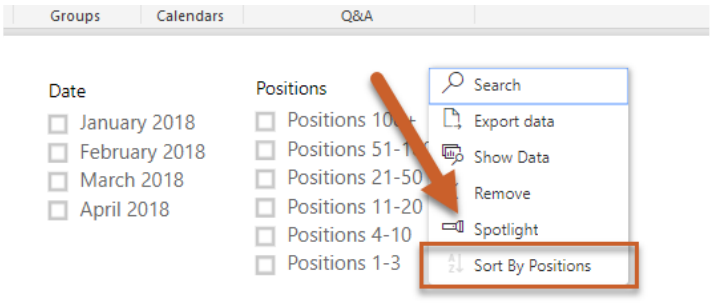


But wait—the slicer is backwards (reading lowest ranking positions at the top and highest at the bottom), which is a little annoying.

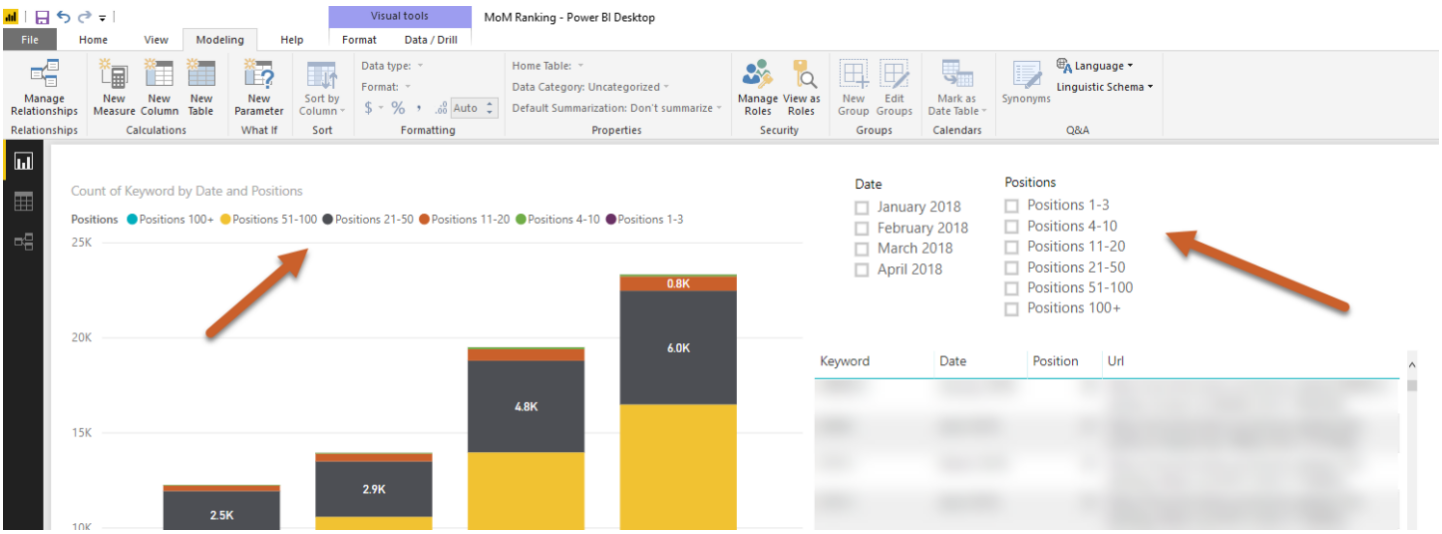
5/ Custom sorting charts

To sort the slicer so that highest ranking is that the top and lowest is that the bottom, right click the ellipses at the top right of the table to open more options. At the bottom, select sort by positions to switch the A-Z sort from Z-A.



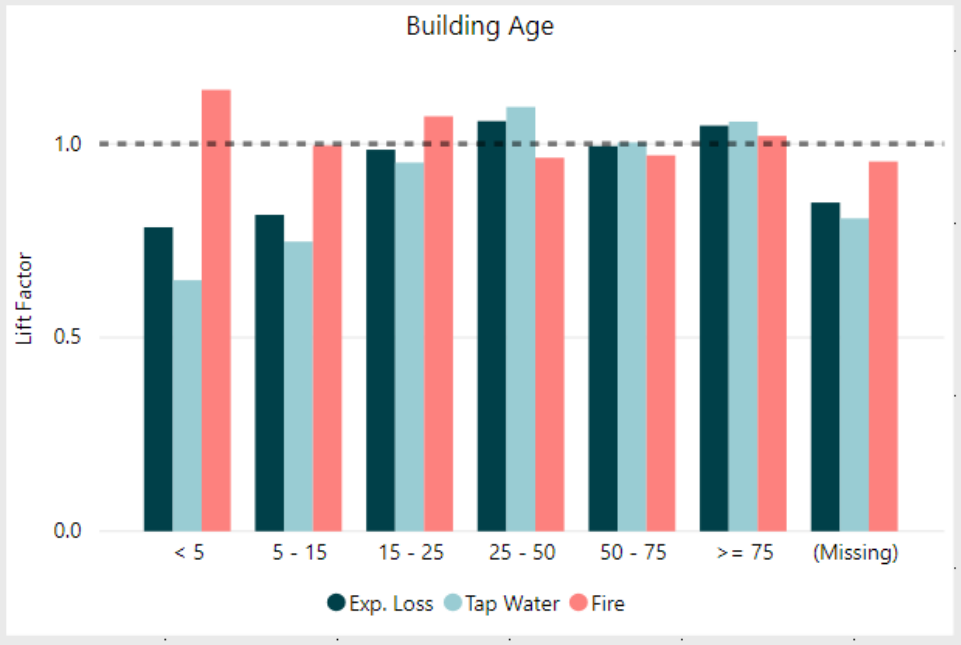


Good to go!



[Source: https://www.seerinteractive.com/blog/reorder-powerbi-legend/]

This applies also for custom sorting in visuals like in the example below:



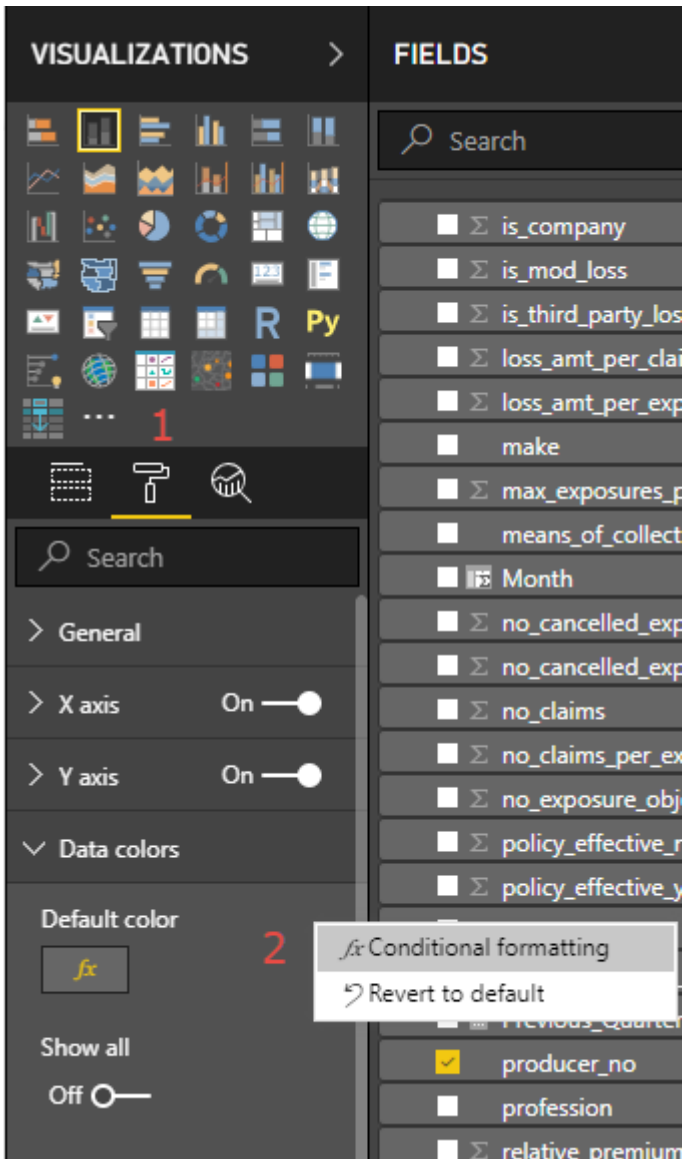
To do so, we just have to add the column with the sorting orders to the Tooltips of our visual, and select to display it as Average. If the order is reverse just click on Sort Ascending/Descending depending on what you need.

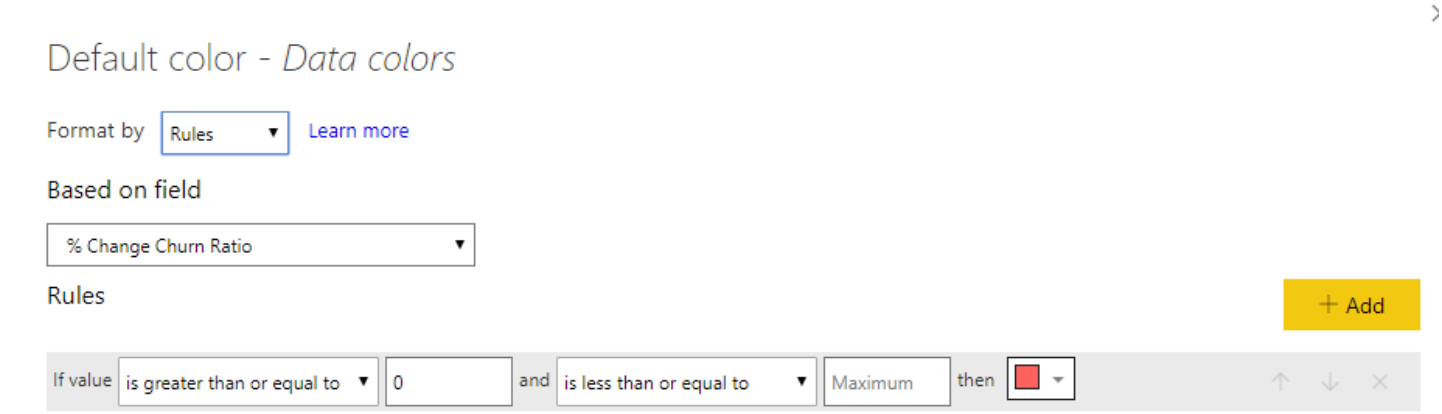
Alternative solution:

An alternative solution is to create the sorting table together with the model output data, simply adding a column to the main table with the integer value of the order you want to have for every variable we want to sort on.
Thanks to this we will get rid of a lot of tables, since we will not need to create a separate table for every variable we want to sort on, a separate column with the "Related" function and a relationship between this and the actual variable.
This makes it also more clear to visualize our Model in the left pane, since adding a table for every variable, connecting it through manage relationship will make a huge mess like in the screenshot below:

Format color from a bar chart

- [ ] Click on the Paintbrush on the right side of the report
- [ ] Choose "Data colors"
- [ ] Right click on the "Conditional formatting"
- [ ] Choose the wanted format then click OK





Change how visuals interact in a Power BI report

Microsoft instruction