An Overview to Tableau Public Visualizations

Summary: Subject to regular updates, Tableau Public is a free, cloud-based version of the Tableau Desktop application widely used for enterprise visualization and analysis of data. Tableau has acquired by Salesforce in a deal that has been subject to a lot of discussion. For the time being, Tableau remains a valuable, easy-to-use and powerful tool for creating visualizations, capable of sophisticated, multi-panel visualizations and can be extensively customized.

As is the case with many cloud-based programs, Tableau has a free or "Public" version, and a desktop version that comes with a potential price tag. Though the desktop version has many advantages, the public version will do just fine for most visualizations, provided journalists use relatively small datasets.

Tableau Public is available in a PC and a Mac version. We will demonstrate using the PC version, but the differences are minimal, beyond the normal operating-system-driven differences.

The advantage of tableau is its interactivity; that is, the ability to use dashboards that showcase interactive displays using tables and maps. Tableau has a website with easy-to-follow, introductory tutorials.

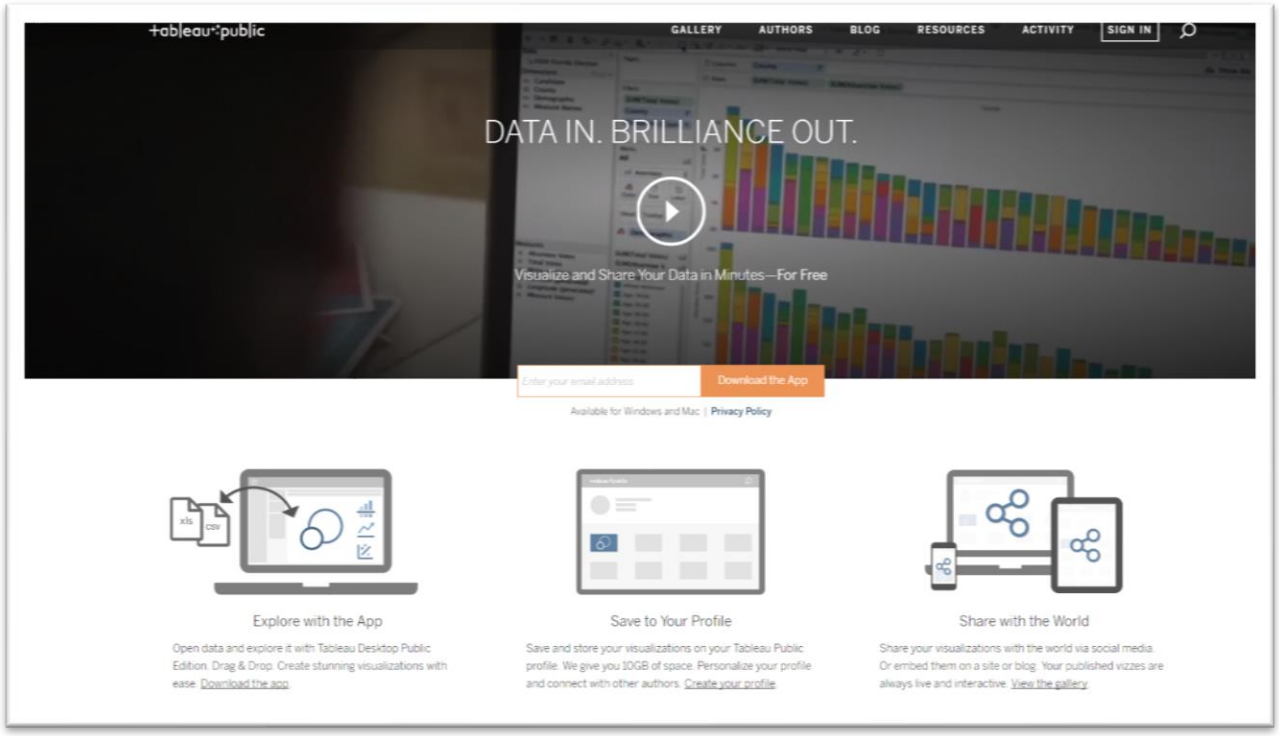
For this exercise, we will use Statistics Canada's annual crime data that breaks down offences for Canada, the provinces and major cities.

What you will learn:

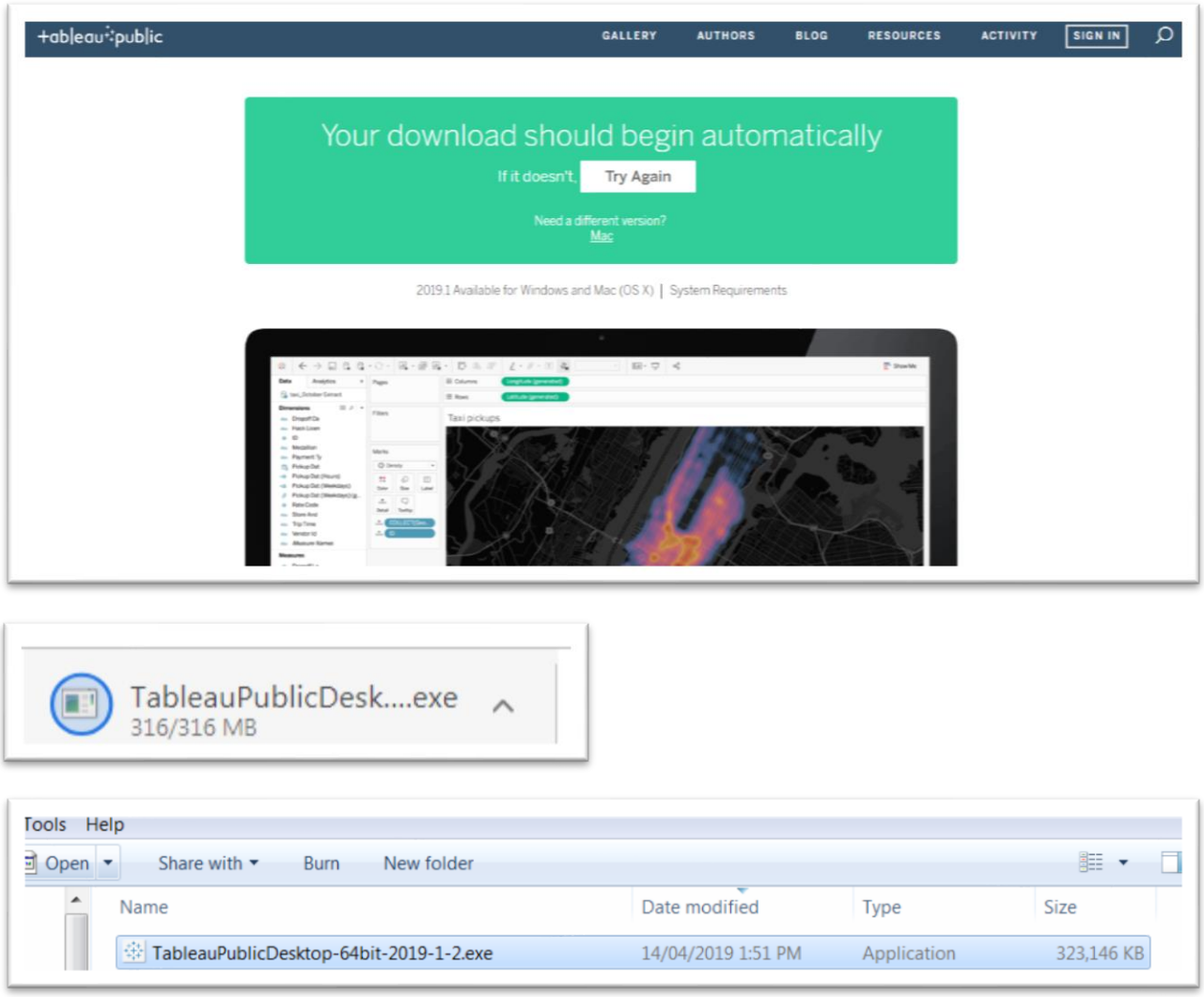
1. Uploading tables to Tableau Public and reformatting values
2. Creating worksheets and using simple Tableau functions to create new columns for geography, cities and provinces.
3. Creating maps and bar graphs.
4. Creating an interactive dashboard.
5. Saving and embedding the visualization in your blog post.

Task 1: Uploading tables to Tableau Public and reformatting values

When you open the website for the first time, you'll see a screen that should look something like this:



If you don't already have an account, you will have to sign up before you can download the latest version of Tableau Public onto your computer.



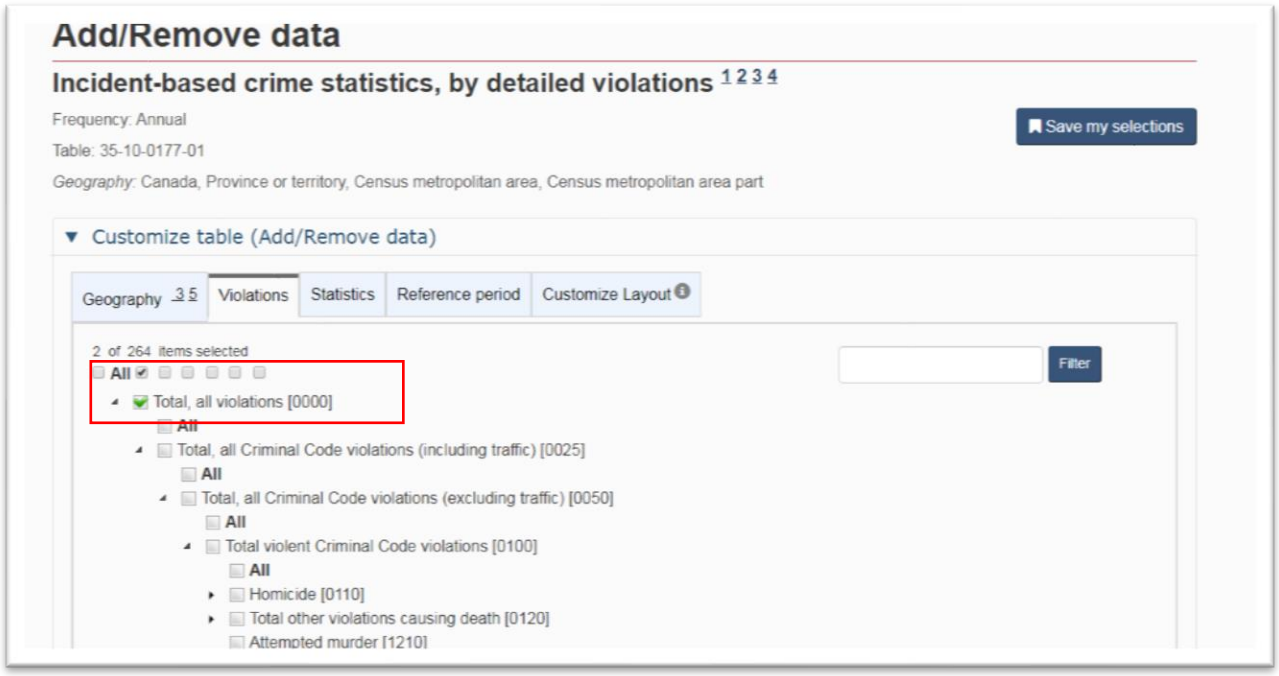
Run the downloaded installer and follow the prompts to install Tableau Public.

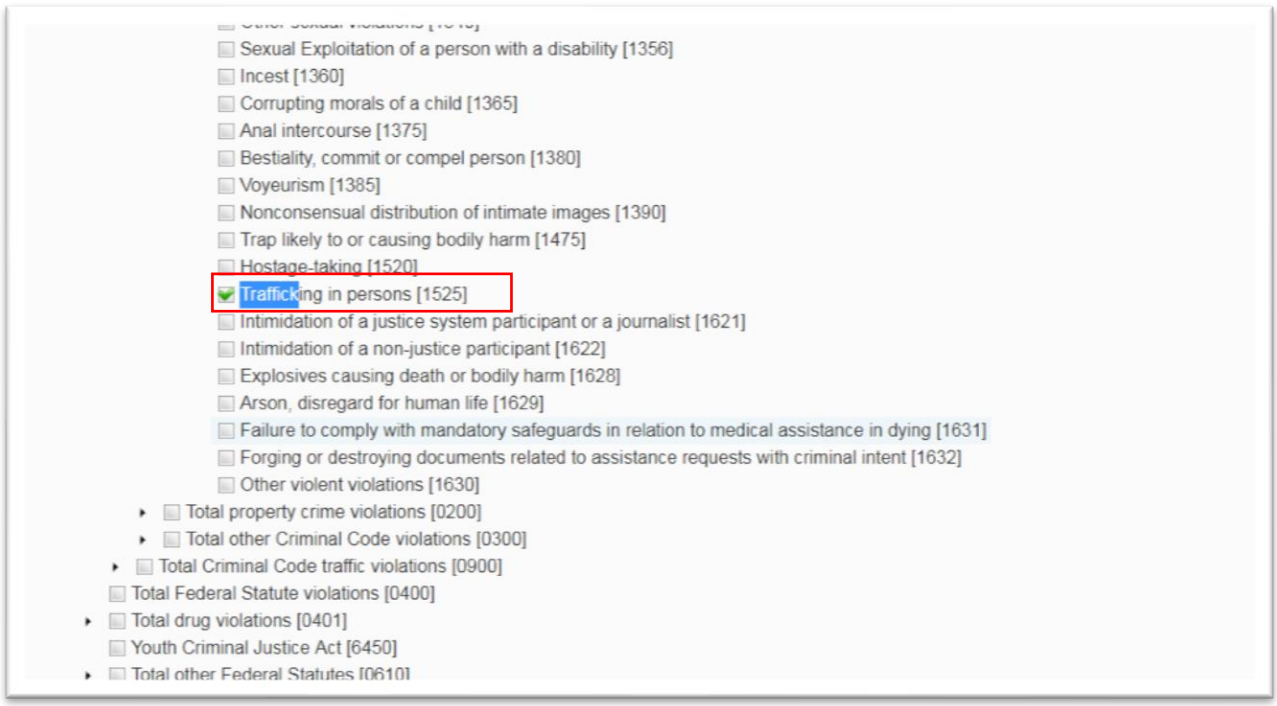
Once you've done so, you'll be able to connect directly to your data, which can be in an Excel workbook, a csv file, Google Sheets, Access or MySQL, the two database manager programs covered in chapter five of The Data Journalist.

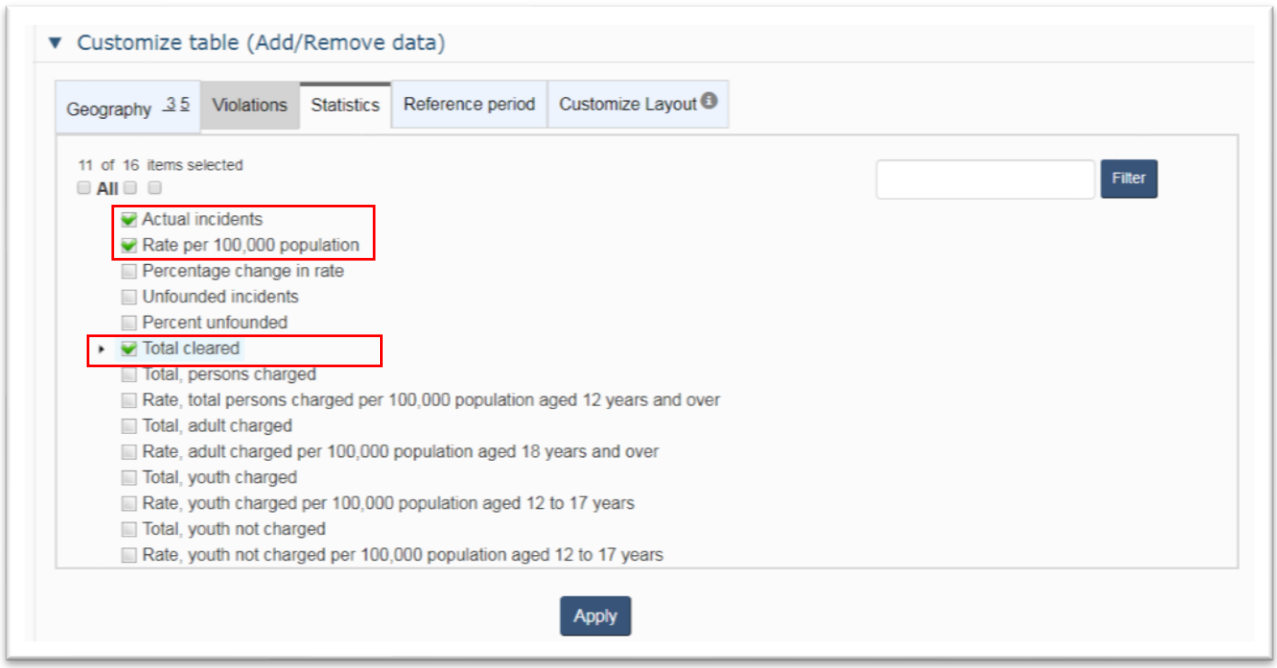
The table we'll be using for this tutorial is located in an Excel workbook that you can download by copying the hyperlink here and pasting it into the tab of the browser you're using.

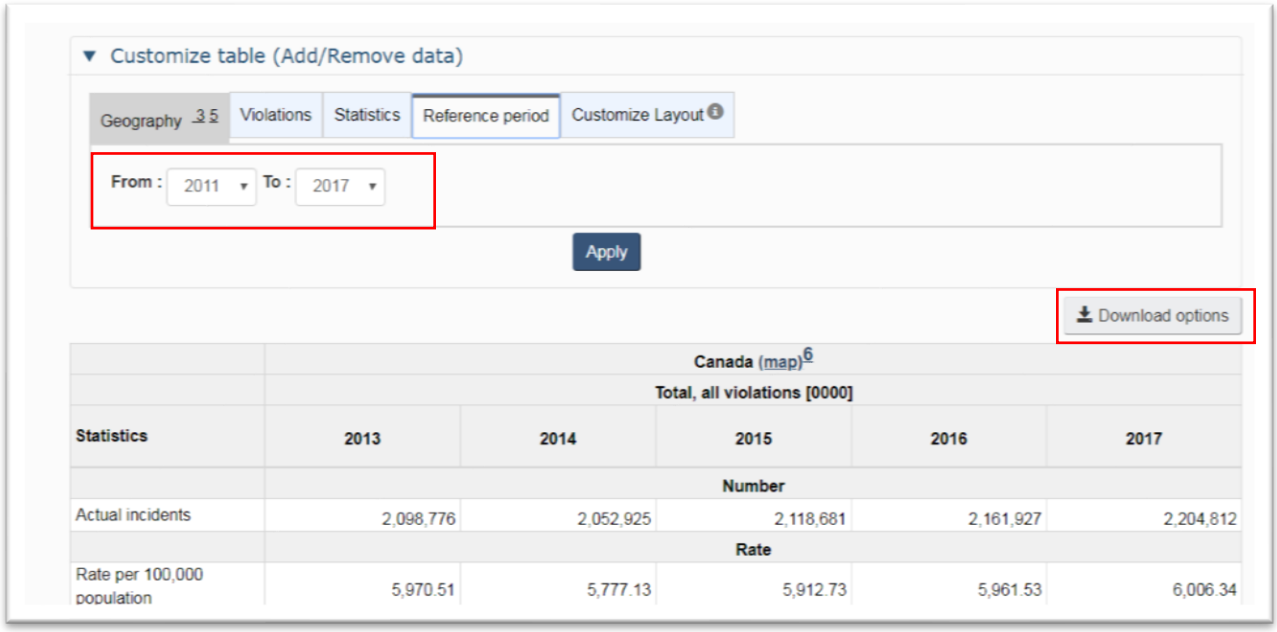
But before we do so, a quick word about the data that Tableau uses to visualize. It's best if the data is in raw format with one record per row. Below, the dataset we'll be using is a filtered table from Statistics Canada's "Incident-based crime

statistics, by detailed violations" dataset, a compilation of the dozens of violations (from murder, to assault, to fraud and break-and-enter) broken down nationally, by province and territory, as well as the largest cities in each of those jurisdictions. Specifically, the Excel table we have filtered and downloaded from the Statistics Canada site contains all incidents colloquially known as human trafficking known officially as "trafficking in persons", an offence, which you can also download by following the steps outlined in the following screen grabs and paying close attention to the steps highlighted in the red triangles.

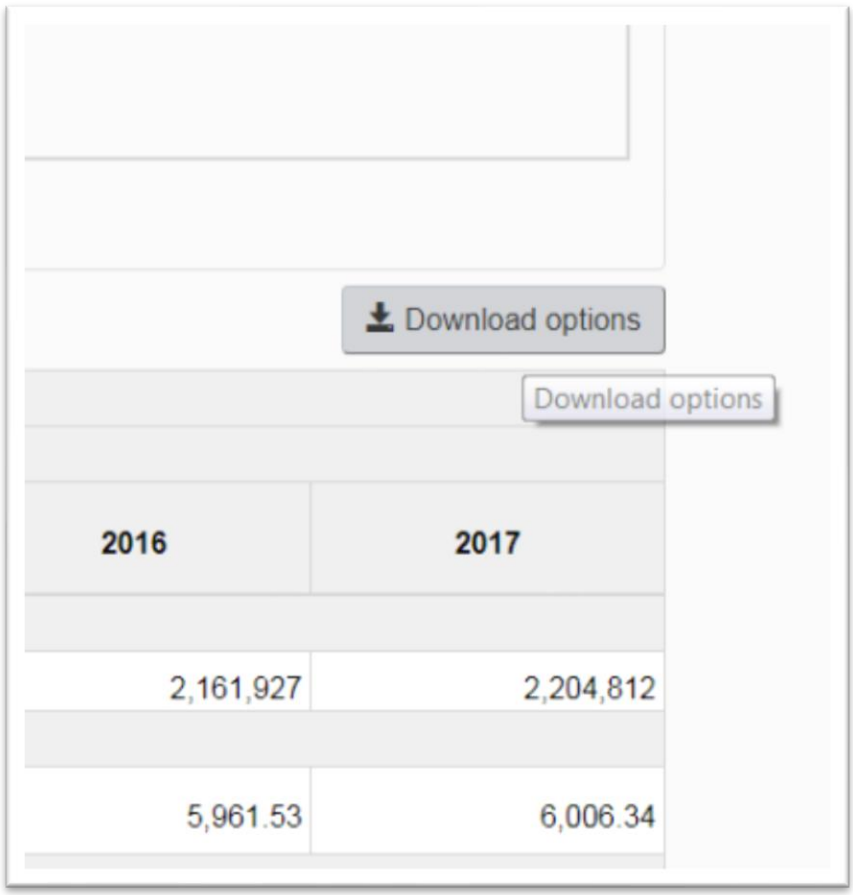


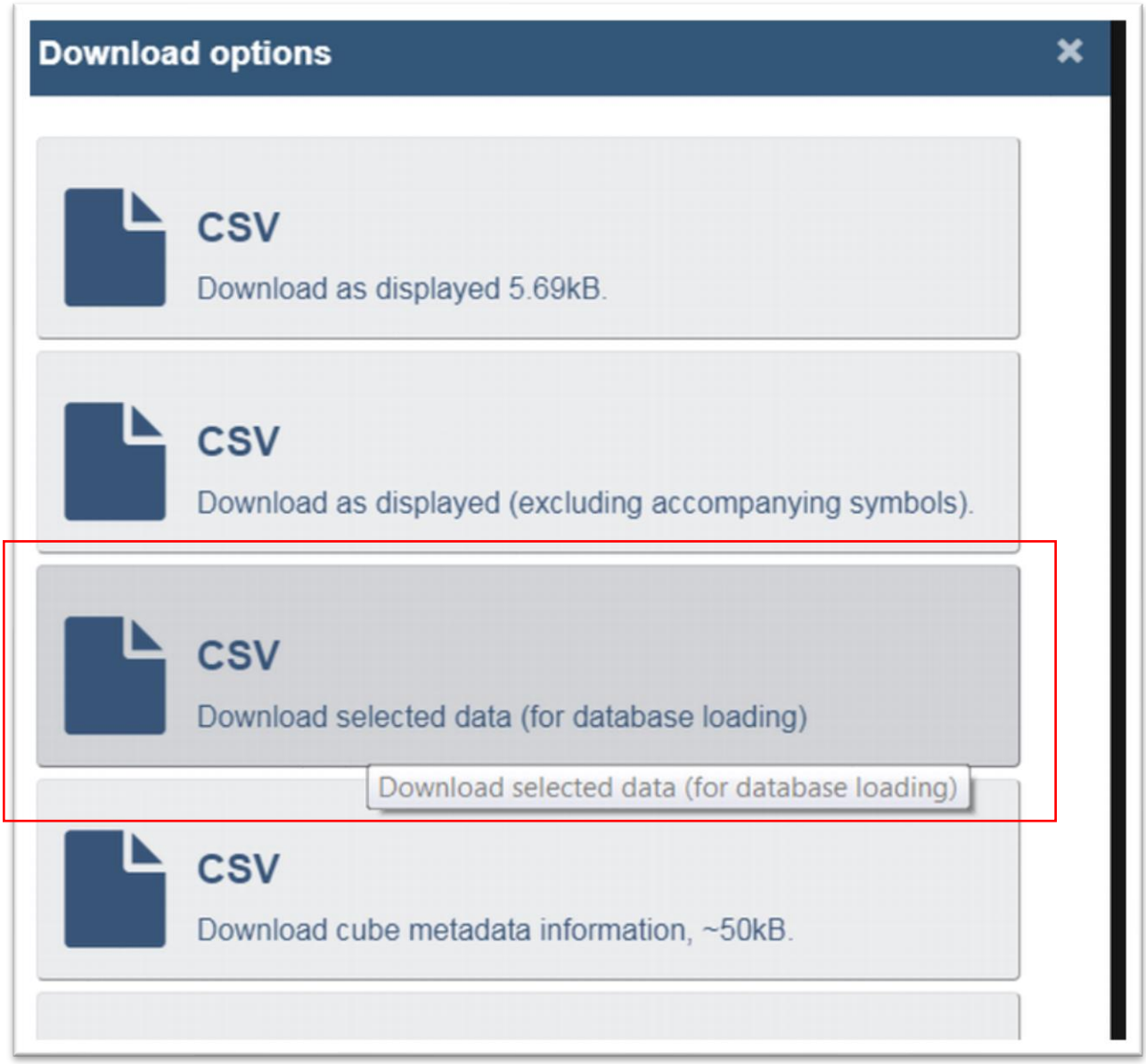

Sexual Exploitation of a person with a disability [1356]
Incest [1360]
Corrupting morals of a child [1365]
Anal intercourse [1375]
Bestiality, commit or compel person [1380]
Voyeurism [1385]
Nonconsensual distribution of intimate images [1390]
Trap likely to or causing bodily harm [1475]
Hostage-taking [1520]
Trafficking in persons [1525]
Intimidation of a justice system participant or a journalist [1621]
Intimidation of a non-justice participant [1622]
Explosives causing death or bodily harm [1628]
Arson, disregard for human life [1629]
Failure to comply with mandatory safeguards in relation to medical assistance in dying [1631]
Forging or destroying documents related to assistance requests with criminal intent [1632]
Other violent violations [1630]
Total property crime violations [0200]
Total other Criminal Code violations [0300]
Total Criminal Code traffic violations [0900]
Total Federal Statute violations [0400]
Total drug violations [0401]
Youth Criminal Justice Act [6450]
Total other Federal Statutes [0610]


Customize table (Add/Remove data)
Geography
Violations
Statistics
Reference period
Customize Layout
11 of 16 items selected
All
Filter
Actual incidents
Rate per 100,000 population
Percentage change in rate
Unfounded incidents
Percent unfounded
Total cleared
Total, persons charged
Rate, total persons charged per 100,000 population aged 12 years and over
Total, adult charged
Rate, adult charged per 100,000 population aged 18 years and over
Total, youth charged
Rate, youth charged per 100,000 population aged 12 to 17 years
Total, youth not charged
Rate, youth not charged per 100,000 population aged 12 to 17 years
Apply

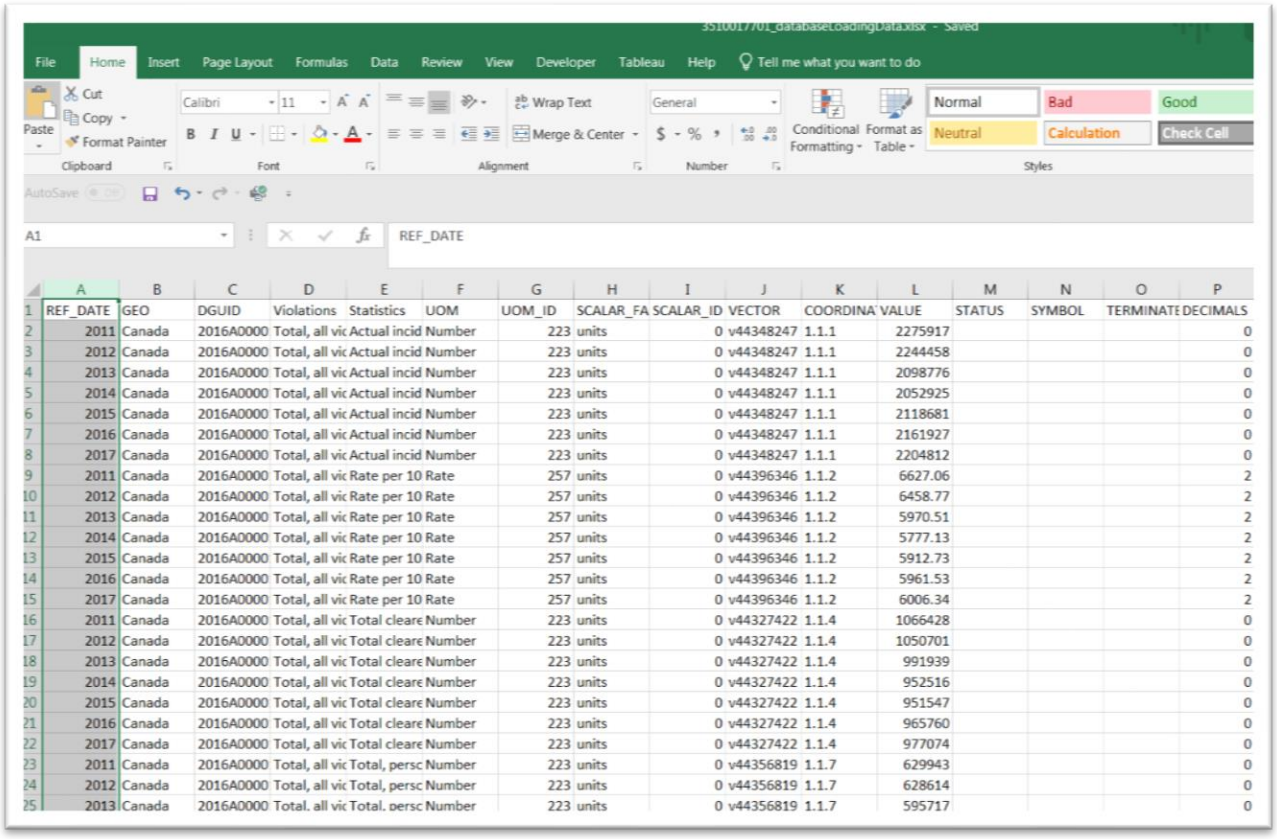


Statistics	Canada (map)[6] Total, all violations [0000] 2013	2014	2015	2016	2017
	Number				
Actual incidents	2,098,776	2,052,925	2,118,681	2,161,927	2,204,812
	Rate				
Rate per 100,000 population	5,970.51	5,777.13	5,912.73	5,961.53	6,006.34




Download options
CSV
Download as displayed 5.69kB.
CSV
Download as displayed (excluding accompanying symbols).
CSV
Download selected data (for database loading)
Download selected data (for database loading)
CSV
Download cube metadata information, ~50kB.

For an explanation of key terms such as “incident”, read the annotation in Statistics Canada’s UCR Manual that has been uploaded to DocumentCloud.

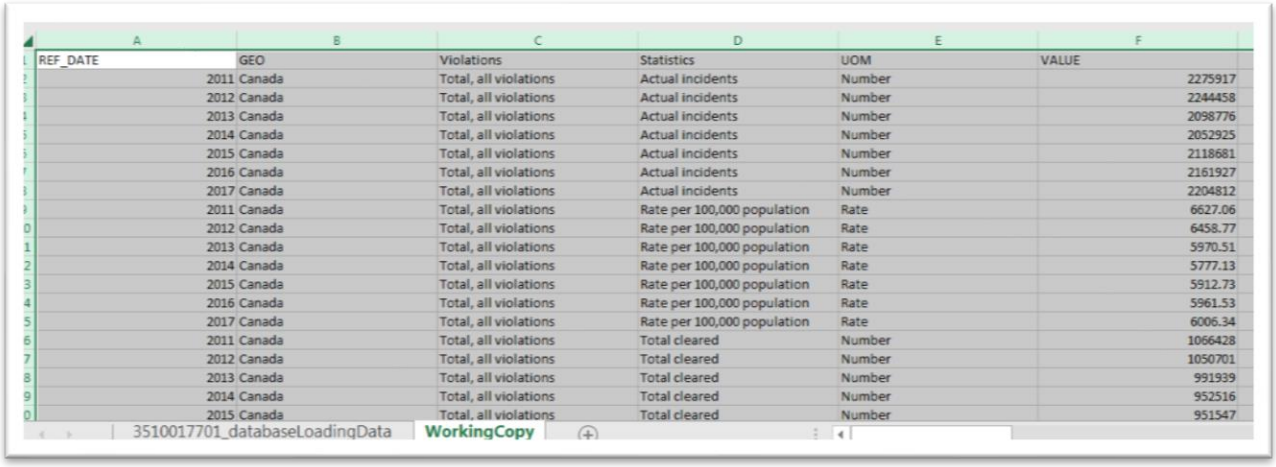


REF_DATE	GEO	DGUID	Violations	Statistics	UOM	UOM_ID	SCALAR_FA	SCALAR_ID	VECTOR	COORDINA	VALUE	STATUS	SYMBOL	TERMINATE	DECIMALS
2011	Canada	2016A0000	Total, all vic	Actual incid	Number	223	units	0	v44348247	1.1.1	2275917				0
2012	Canada	2016A0000	Total, all vic	Actual incid	Number	223	units	0	v44348247	1.1.1	2244458				0
2013	Canada	2016A0000	Total, all vic	Actual incid	Number	223	units	0	v44348247	1.1.1	2098776				0
2014	Canada	2016A0000	Total, all vic	Actual incid	Number	223	units	0	v44348247	1.1.1	2052925				0
2015	Canada	2016A0000	Total, all vic	Actual incid	Number	223	units	0	v44348247	1.1.1	2118681				0
2016	Canada	2016A0000	Total, all vic	Actual incid	Number	223	units	0	v44348247	1.1.1	2161927				0
2017	Canada	2016A0000	Total, all vic	Actual incid	Number	223	units	0	v44348247	1.1.1	2204812				0
2011	Canada	2016A0000	Total, all vic	Rate per 10	Rate	257	units	0	v44396346	1.1.2	6627.06				2
2012	Canada	2016A0000	Total, all vic	Rate per 10	Rate	257	units	0	v44396346	1.1.2	6458.77				2
2013	Canada	2016A0000	Total, all vic	Rate per 10	Rate	257	units	0	v44396346	1.1.2	5970.51				2
2014	Canada	2016A0000	Total, all vic	Rate per 10	Rate	257	units	0	v44396346	1.1.2	5777.13				2
2015	Canada	2016A0000	Total, all vic	Rate per 10	Rate	257	units	0	v44396346	1.1.2	5912.73				2
2016	Canada	2016A0000	Total, all vic	Rate per 10	Rate	257	units	0	v44396346	1.1.2	5961.53				2
2017	Canada	2016A0000	Total, all vic	Rate per 10	Rate	257	units	0	v44396346	1.1.2	6006.34				2
2011	Canada	2016A0000	Total, all vic	Total cleare	Number	223	units	0	v44327422	1.1.4	1066428				0
2012	Canada	2016A0000	Total, all vic	Total cleare	Number	223	units	0	v44327422	1.1.4	1050701				0
2013	Canada	2016A0000	Total, all vic	Total cleare	Number	223	units	0	v44327422	1.1.4	991939				0
2014	Canada	2016A0000	Total, all vic	Total cleare	Number	223	units	0	v44327422	1.1.4	952516				0
2015	Canada	2016A0000	Total, all vic	Total cleare	Number	223	units	0	v44327422	1.1.4	951547				0
2016	Canada	2016A0000	Total, all vic	Total cleare	Number	223	units	0	v44327422	1.1.4	965760				0
2017	Canada	2016A0000	Total, all vic	Total cleare	Number	223	units	0	v44327422	1.1.4	977074				0
2011	Canada	2016A0000	Total, all vic	Total, persc	Number	223	units	0	v44356819	1.1.7	629943				0
2012	Canada	2016A0000	Total, all vic	Total, persc	Number	223	units	0	v44356819	1.1.7	628614				0
2013	Canada	2016A0000	Total, all vic	Total, persc	Number	223	units	0	v44356819	1.1.7	595717				0

It’s usually a good idea to do as much clean-up as possible in your spreadsheet before uploading the data. We will do this on a second worksheet contains a pasted copy of the original dataset. Save the csv file in Excel format, as it allows for multiple worksheets.

Label the new worksheet “WorkingCopy”. Now we can delete all the columns except for A,B,D,E,F, and L. Deleting those columns will leave you with this

selection.

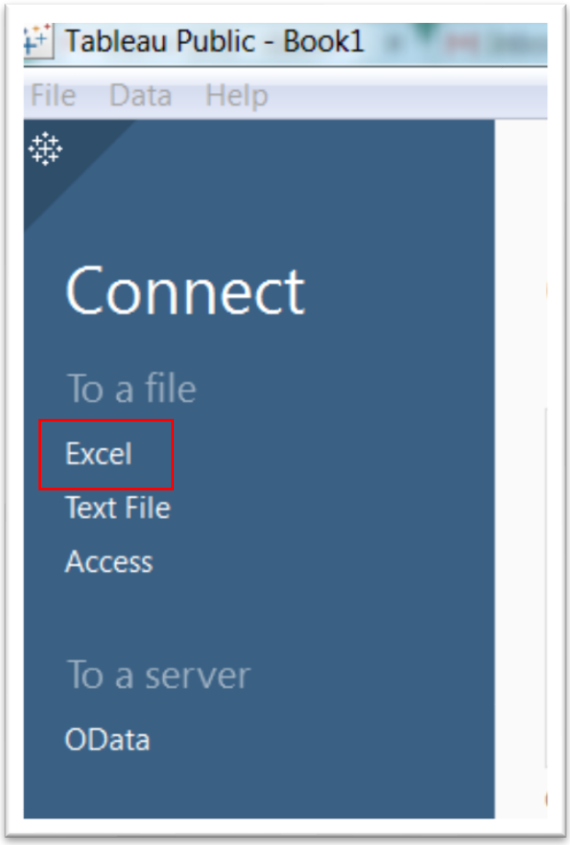


	A	B	C	D	E	F
1	REF_DATE	GEO	Violations	Statistics	UOM	VALUE
2	2011	Canada	Total, all violations	Actual incidents	Number	2275917
3	2012	Canada	Total, all violations	Actual incidents	Number	2244458
4	2013	Canada	Total, all violations	Actual incidents	Number	2098776
5	2014	Canada	Total, all violations	Actual incidents	Number	2052925
6	2015	Canada	Total, all violations	Actual incidents	Number	2118681
7	2016	Canada	Total, all violations	Actual incidents	Number	2161927
8	2017	Canada	Total, all violations	Actual incidents	Number	2204812
9	2011	Canada	Total, all violations	Rate per 100,000 population	Rate	6627.06
10	2012	Canada	Total, all violations	Rate per 100,000 population	Rate	6458.77
11	2013	Canada	Total, all violations	Rate per 100,000 population	Rate	5970.51
12	2014	Canada	Total, all violations	Rate per 100,000 population	Rate	5777.13
13	2015	Canada	Total, all violations	Rate per 100,000 population	Rate	5912.73
14	2016	Canada	Total, all violations	Rate per 100,000 population	Rate	5961.53
15	2017	Canada	Total, all violations	Rate per 100,000 population	Rate	6006.34
16	2011	Canada	Total, all violations	Total cleared	Number	1066428
17	2012	Canada	Total, all violations	Total cleared	Number	1050701
18	2013	Canada	Total, all violations	Total cleared	Number	991939
19	2014	Canada	Total, all violations	Total cleared	Number	952516
20	2015	Canada	Total, all violations	Total cleared	Number	951547

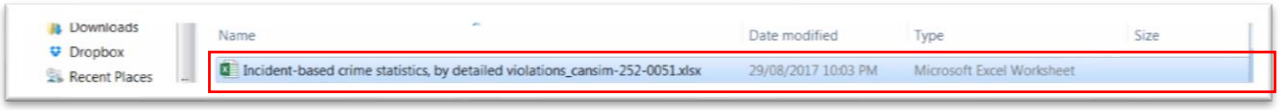
3510017701_databaseLoadingData | WorkingCopy

Before we go any further, a note about the statistics in column D. We filtered the original Statistics Canada table for three of them: “Actual incidents”; “Rate per 100,000 population (chapter four discusses rates)”; and “Total cleared”. Our Tableau visualization will be able to display actual incidents, rates and a map of the geographic locations in column D on one worksheet called a dashboard.

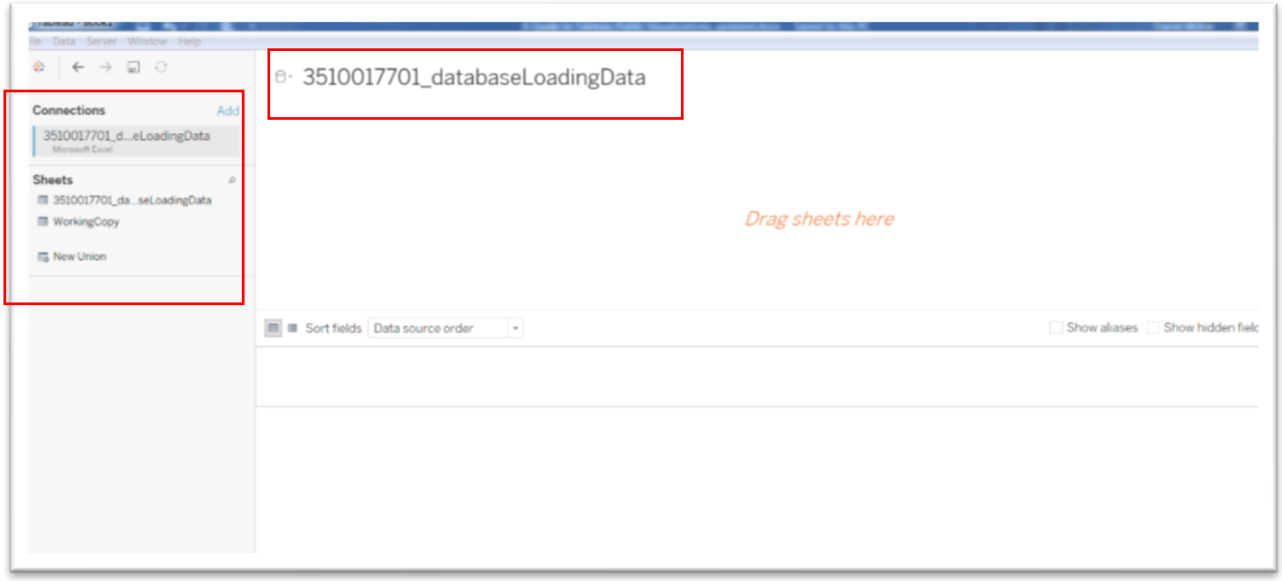
Now that you've got the most recent version of Tableau Public installed on your computer, find the icon on the desktop and open it.



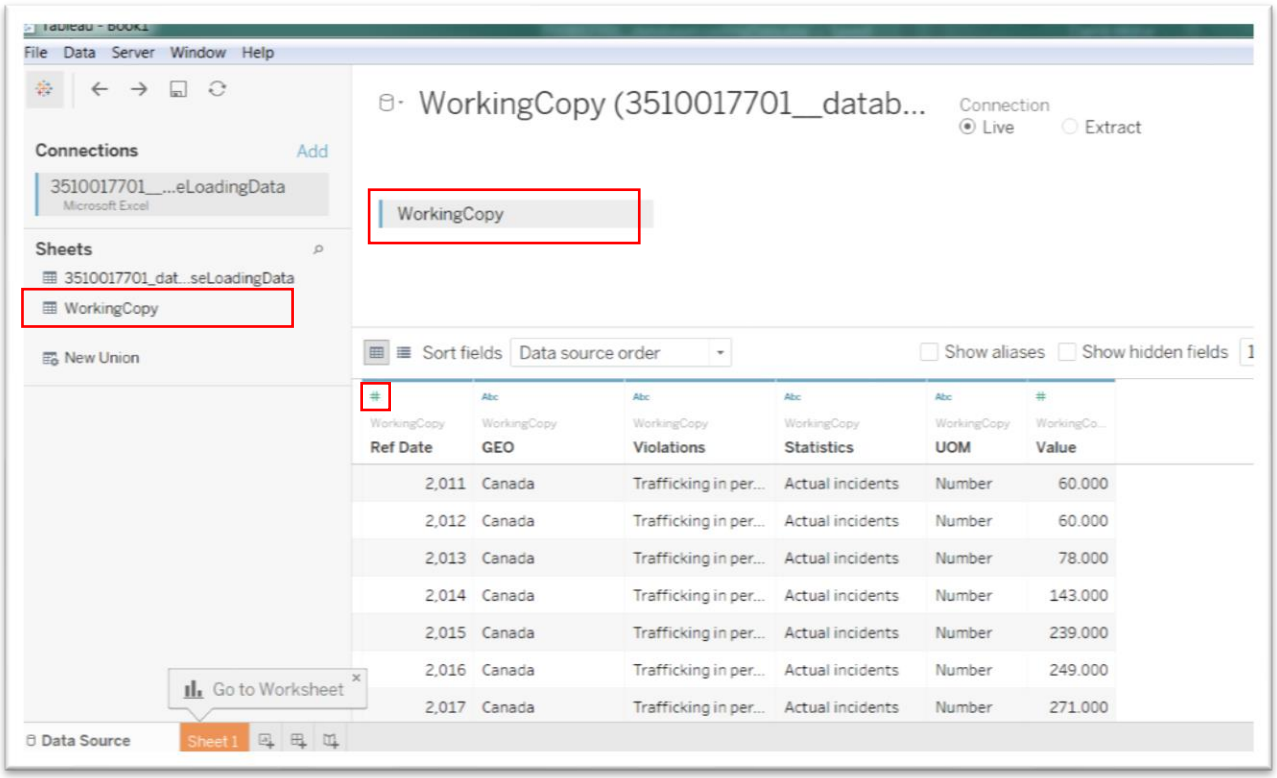
In this case, we want to connect to an Excel file. Click the word Excel, which allows you to browse for the file.



After selecting the file, you'll be taken to a screen that looks like this:



On your left, you'll see the Excel workbook's two worksheets: the original table, and the cleaned-up version called "WorkingCopy". Drag the "WorkingCopy" tab into the "Drag sheets here" area to the right.

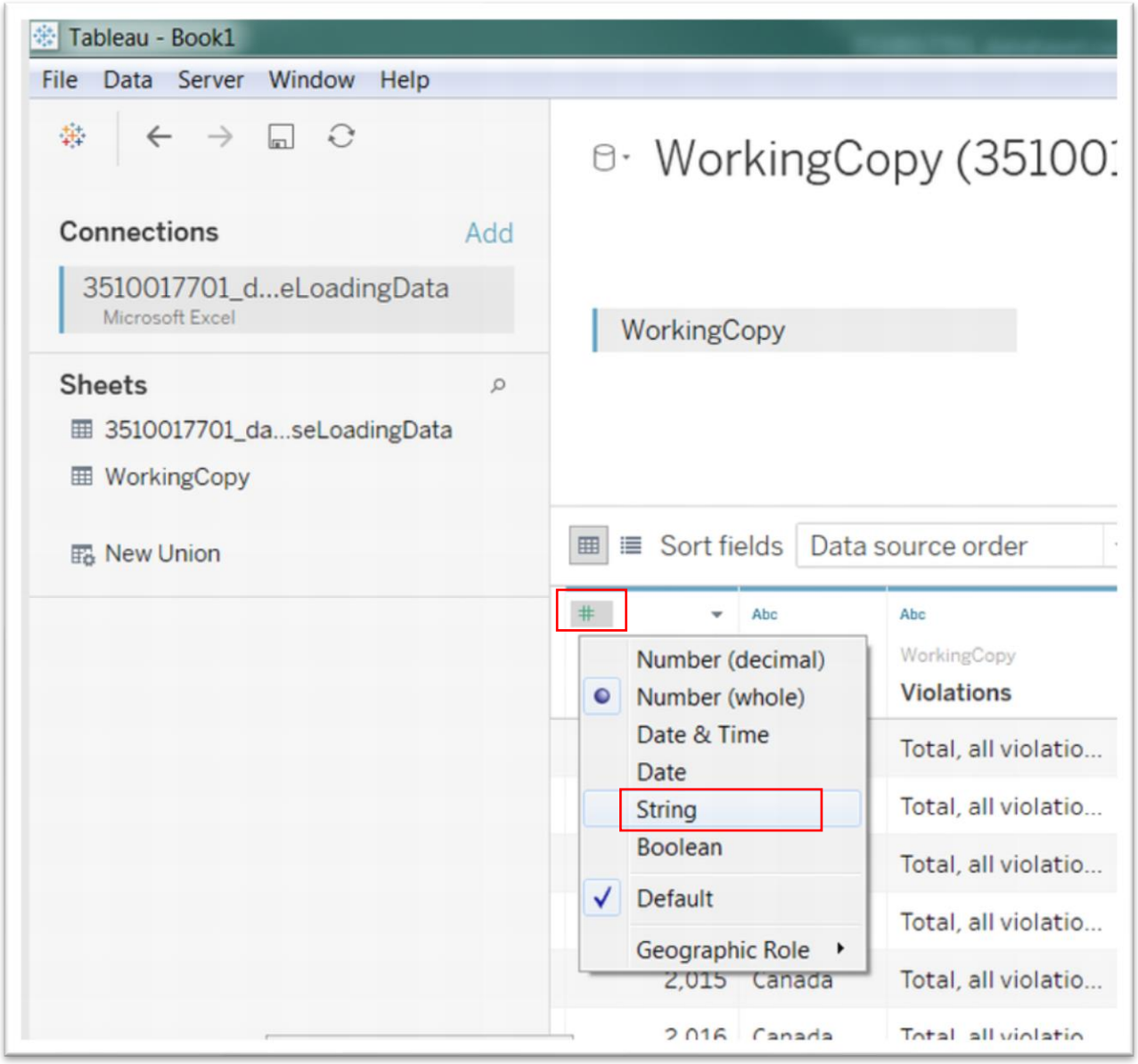


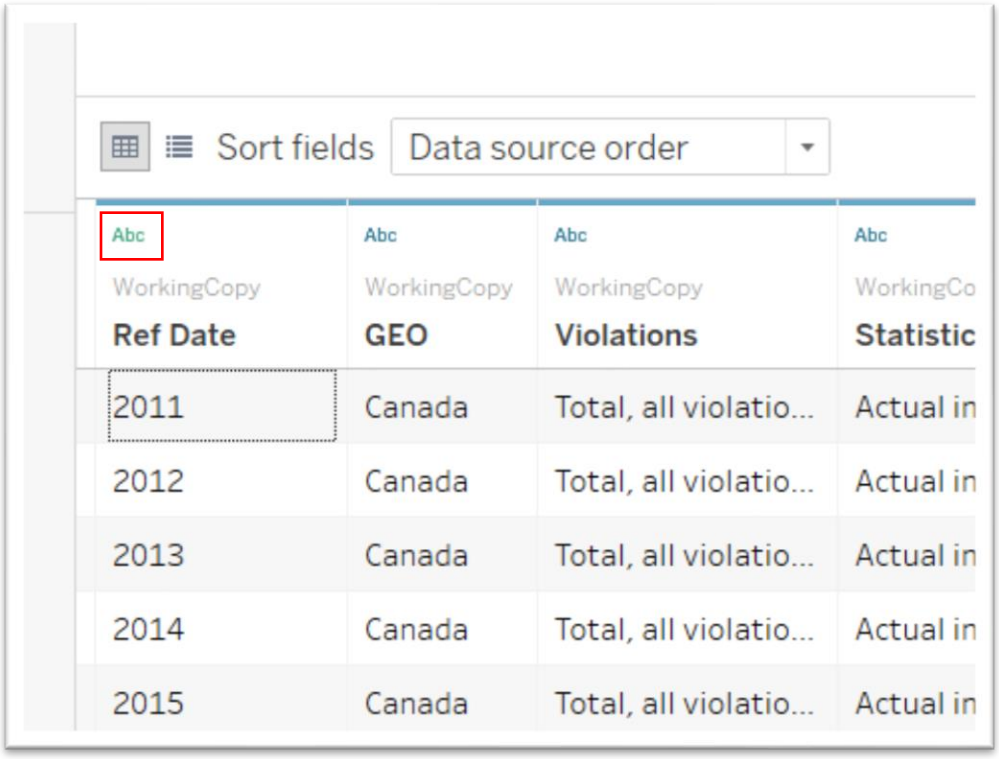
Renaming the column titles is as easy as clicking on them and typing a new name. In this case, the titles are self-explanatory.

Before going any further, it's important to pay close attention to the icons above the column headings that indicate the formatting.

The hashtag (#) above the "Ref Date" column indicates that Tableau identified this field as a number. We want to reformat the numbers as text, or a "strings".

Click the hashtag symbol.

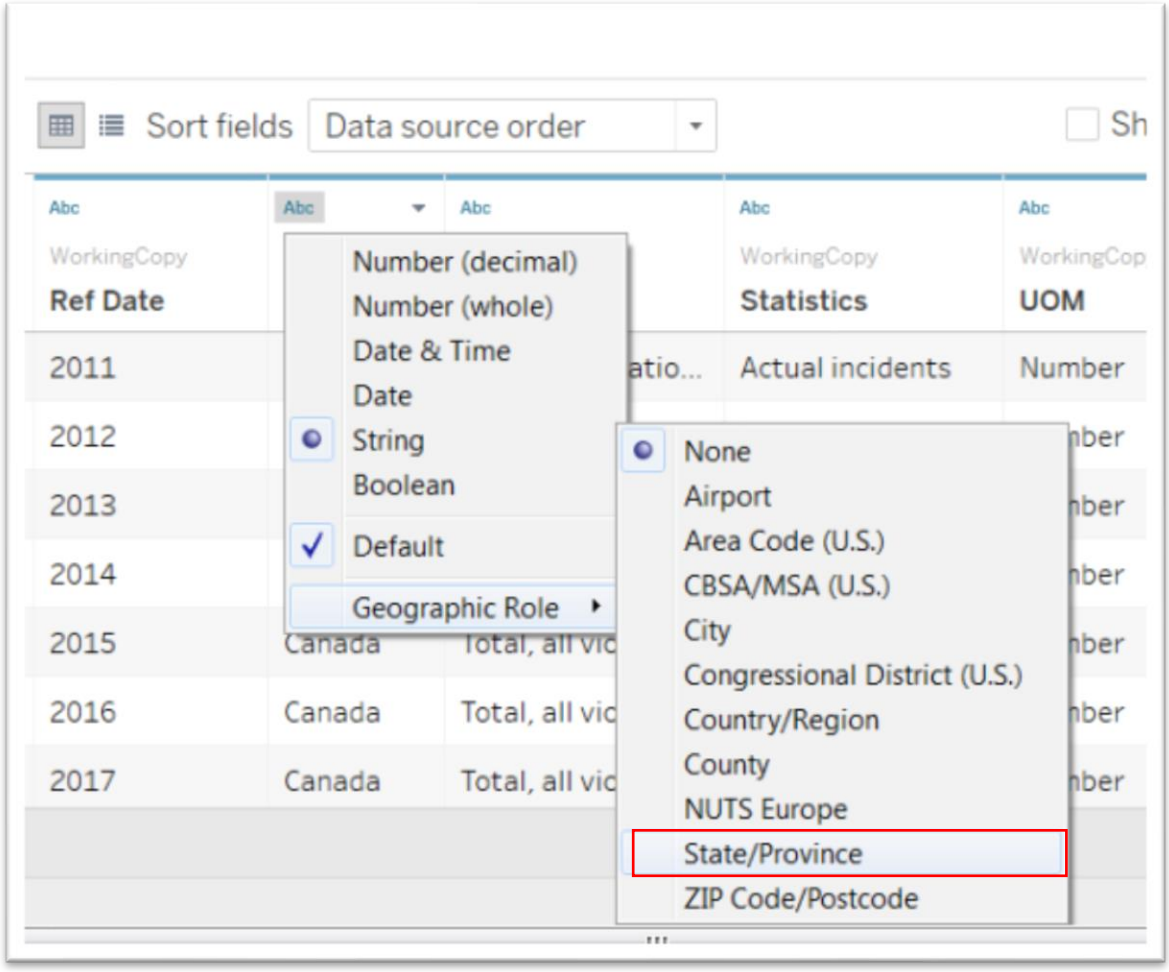




Converting to a string function, represented by the “Abc” icon, gets rid of the 1000 separator (,).

The GEO column must also be reformatted to allow Tableau to recognize the names in the column as geographical settings. As we did to reformat the date

column, click on the icon to obtain a drop-down menu.



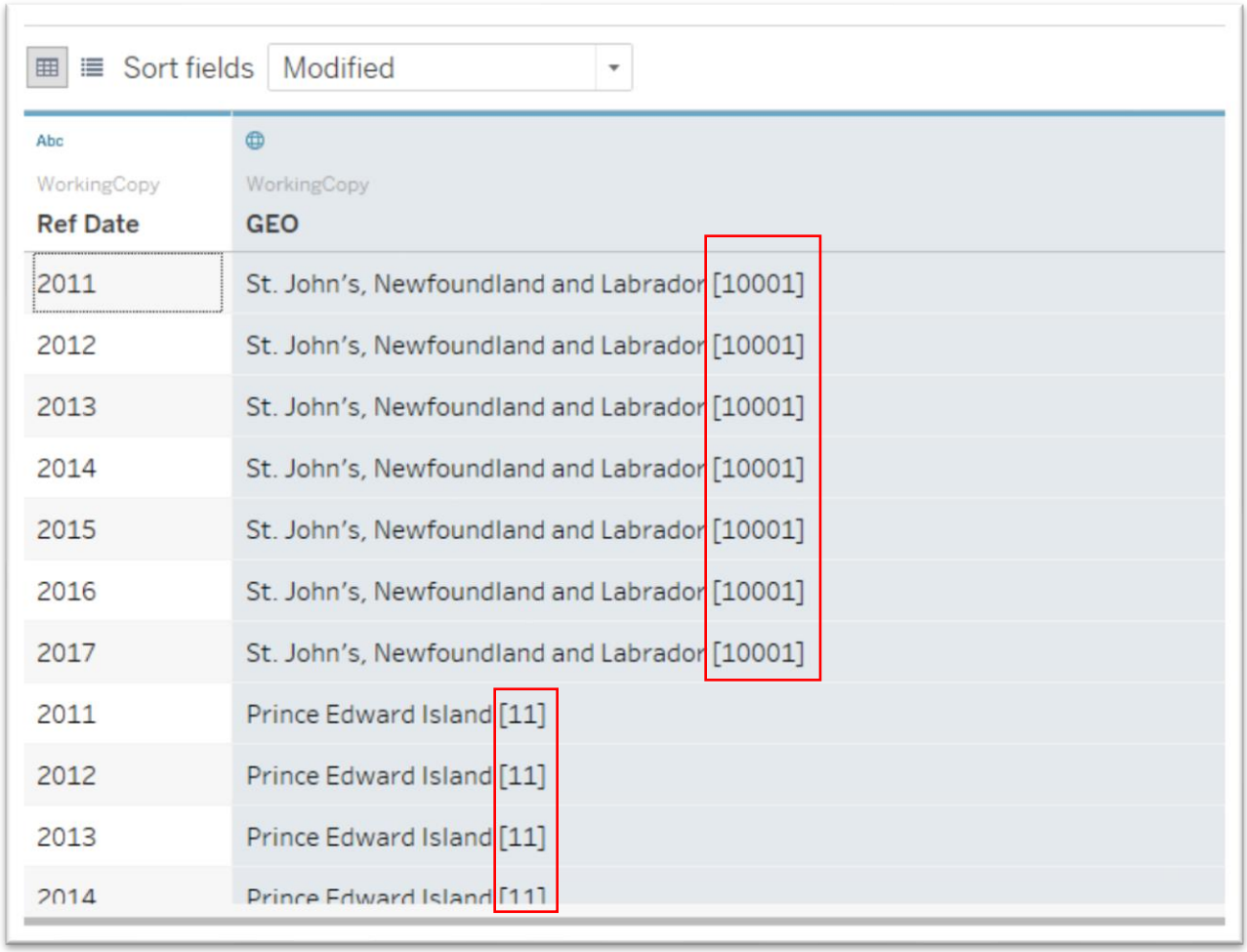
The globe icon above the column means Tableau recognizes the names as geographic coordinates, which it can plot on a map.

In this Statistics Canada table, there are three levels of geography: country (Canada); province and cities. In order to build a dashboard that uses provinces as filters, we must create new columns in Tableau using functions to create three, new columns: a clean one for geography without the numbers in brackets; a second for province; and a third for cities.

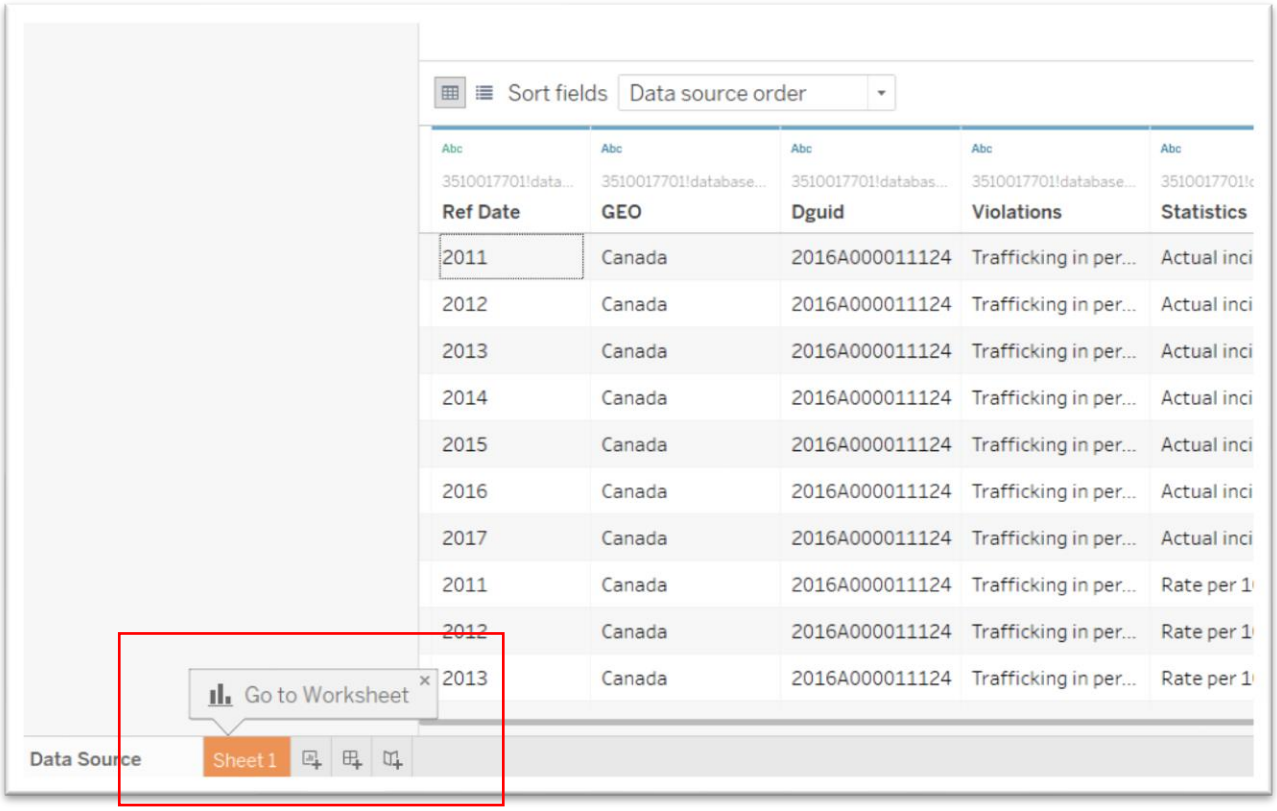
Task 2: Creating worksheets and using simple Tableau functions to create new columns for geography, cities and provinces

You can click here to view the list of Tableau functions.

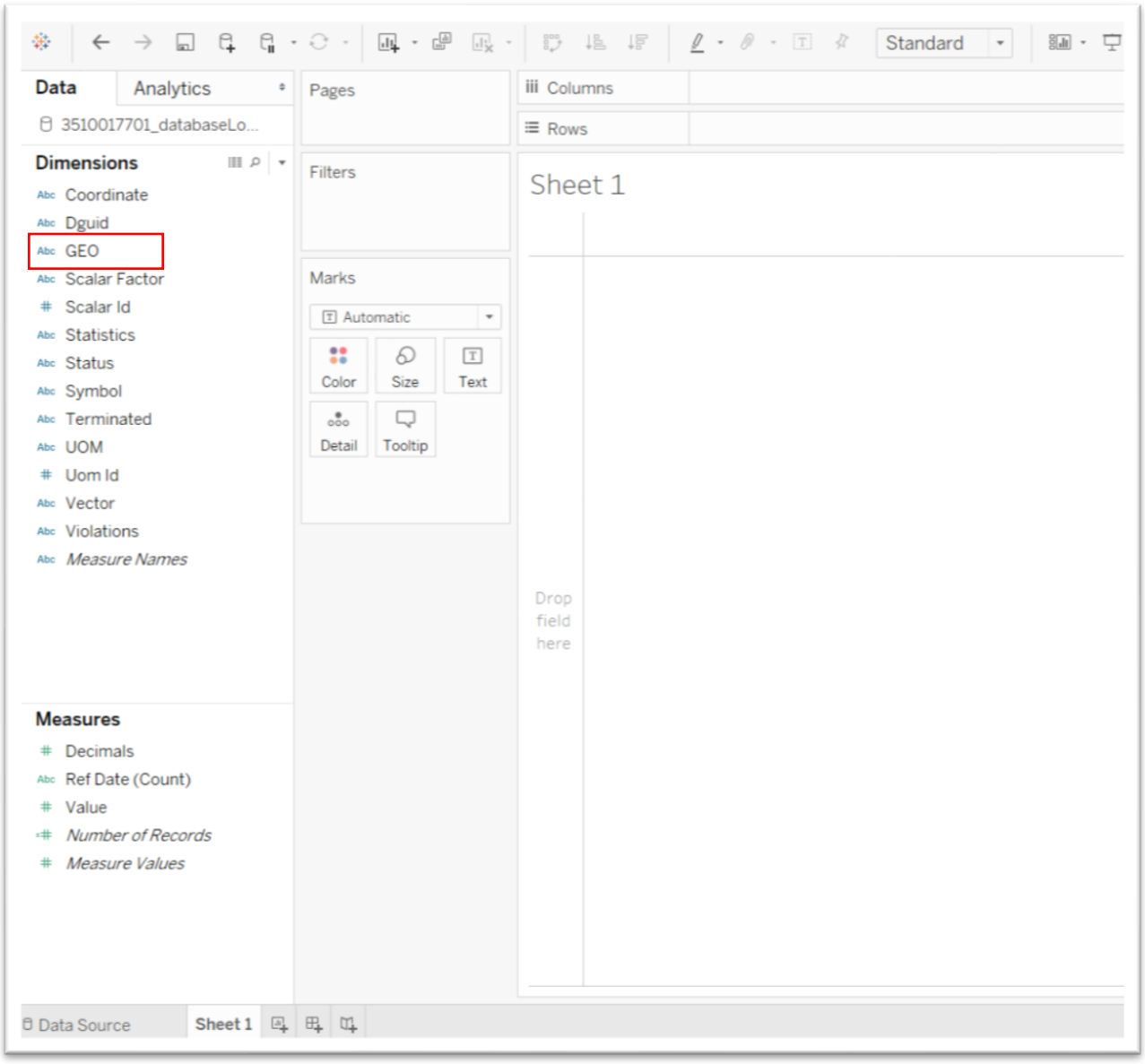
By selecting the “Geography” column in the “Data Source” worksheet (the one that contains the original Excel file we imported), we can see the problem we’re dealing with highlighted in the red triangle.



We must first split, or get rid of, the numbers in the square brackets, and then separate cities (St. John’s) and provinces (Newfoundland and Labrador) into their own columns, a task that can be accomplished in our first worksheet to the right of the “Dara Source” tab.

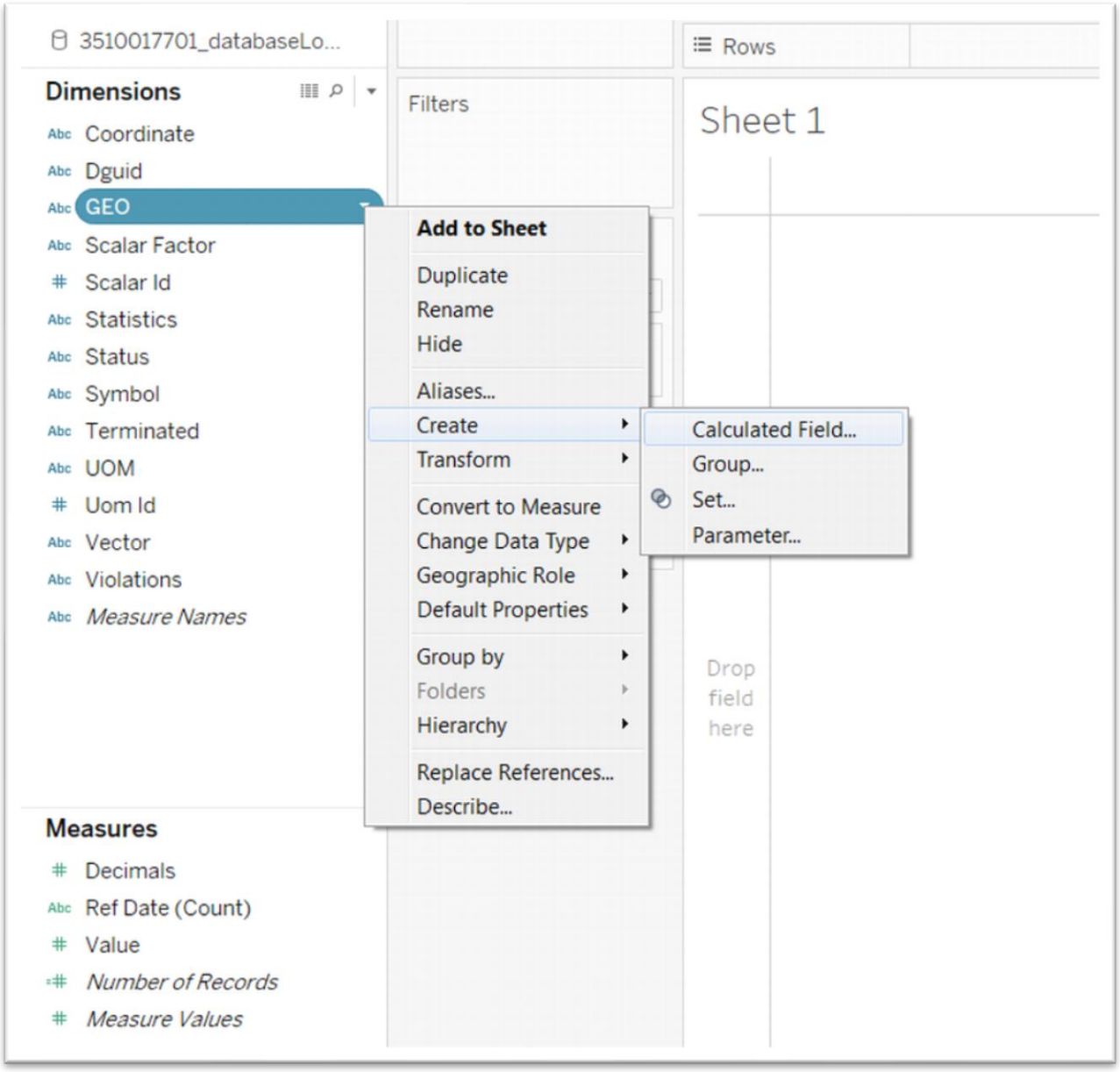

Sort fields
Data source order
Abc
3510017701!data...
Ref Date
Abc
3510017701!database...
GEO
Abc
3510017701!databas...
Dguid
Abc
3510017701!database...
Violations
Abc
3510017701!
Statistics
2011 Canada 2016A000011124 Trafficking in per... Actual inci
2012 Canada 2016A000011124 Trafficking in per... Actual inci
2013 Canada 2016A000011124 Trafficking in per... Actual inci
2014 Canada 2016A000011124 Trafficking in per... Actual inci
2015 Canada 2016A000011124 Trafficking in per... Actual inci
2016 Canada 2016A000011124 Trafficking in per... Actual inci
2017 Canada 2016A000011124 Trafficking in per... Actual inci
2011 Canada 2016A000011124 Trafficking in per... Rate per 1
2012 Canada 2016A000011124 Trafficking in per... Rate per 1
2013 Canada 2016A000011124 Trafficking in per... Rate per 1
Go to Worksheet
Data Source
Sheet 1

Go to “Sheet 1.”

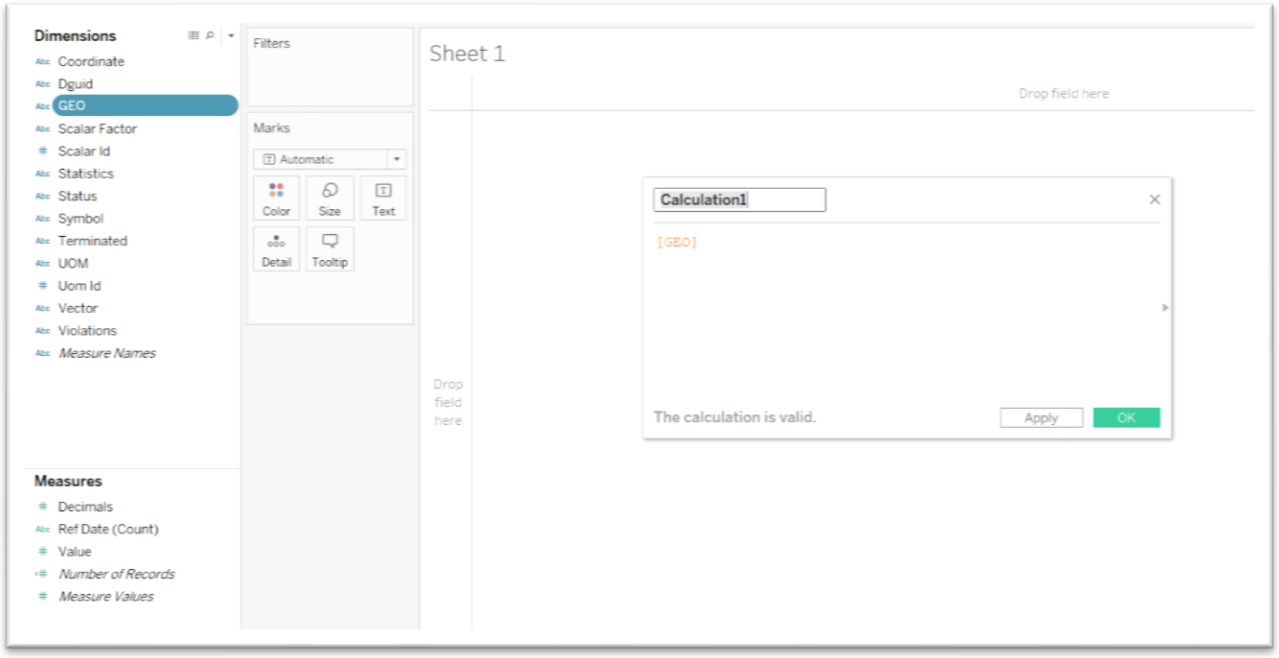


We will create three new geography fields: one without the numbers in square brackets; one with just the cities; and a third with the provinces. Splitting the geography fields makes it easier to create an interactive dashboard, as we’ll see later in this tutorial.

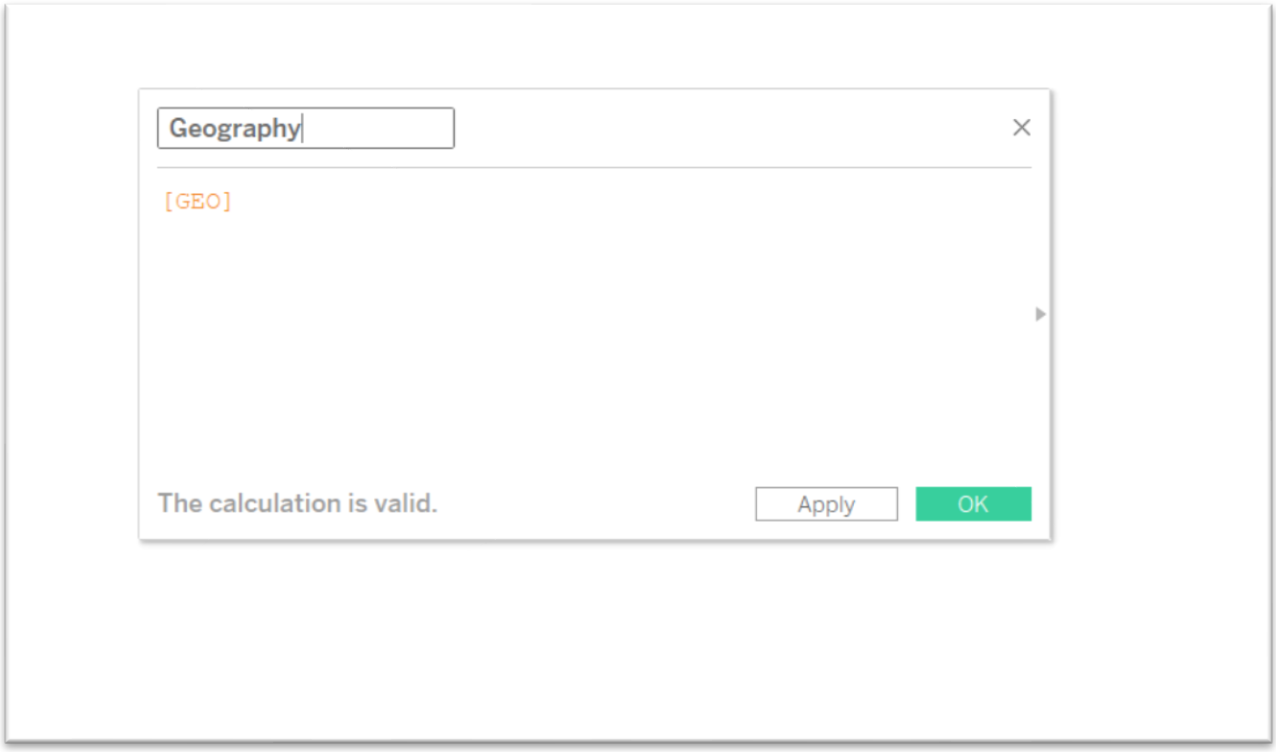
Place your cursor over the “GEO” title in the “Dimensions” section to the left, and click the caret to obtain a drop-down menu.



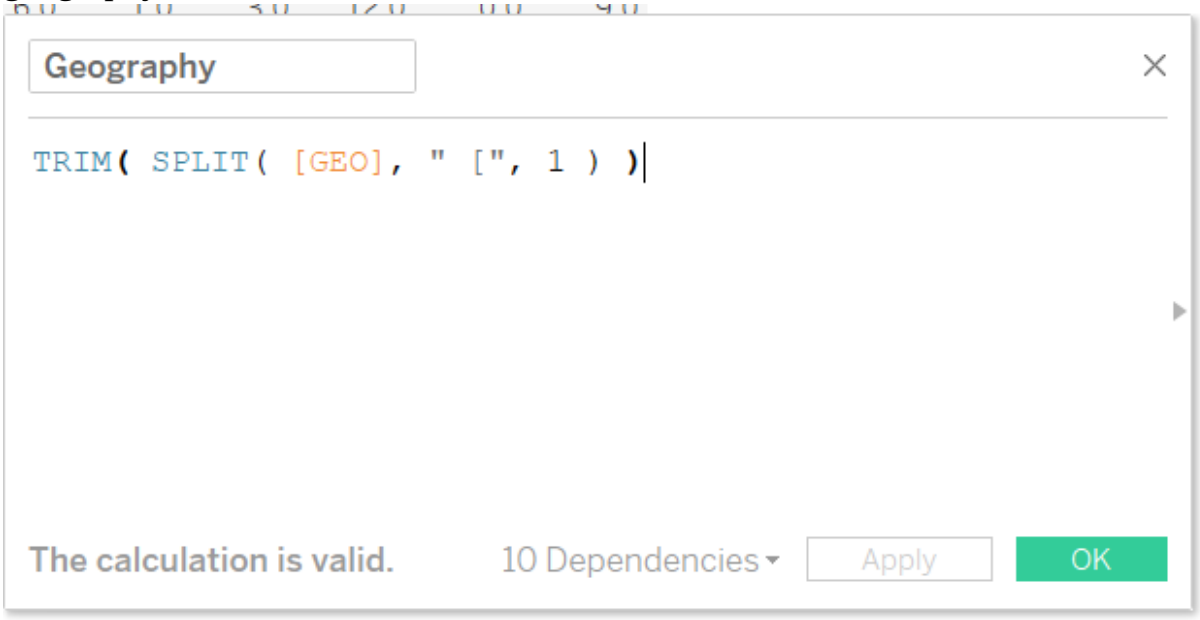
Select “Calculated Field.”



Let’s give the new field a title: “Geography.”



We'll use the function that will split the bracketed numbers from the actual geography names.

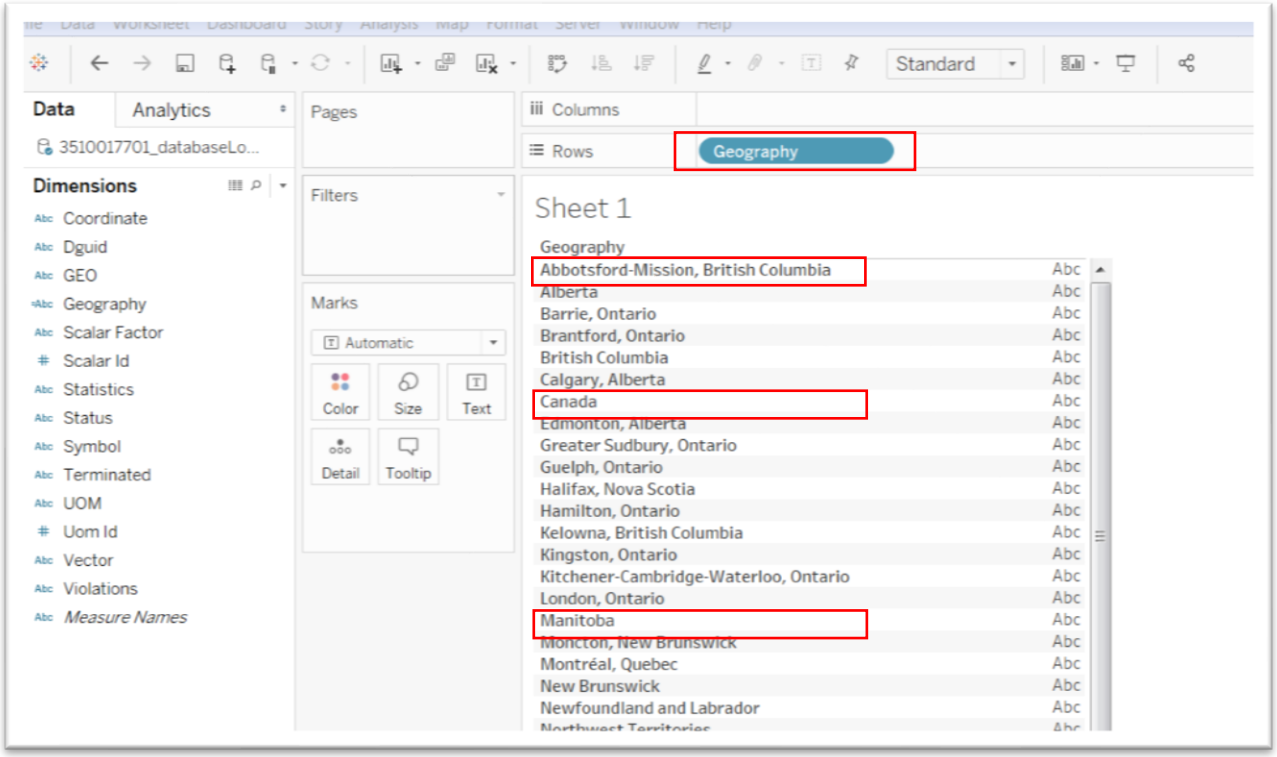


Translated into English, this function means we are trimming any leading spaces in column we're about to create, and then using the square bracket as a delimiter to split the string into "tokens". The '1' argument indicates that we are only interested in the first token of the split string, ie, everything before the square bracket.

Select the OK tab.

If you want to see what the new column looks like, you can either return to the Data Source tab and scroll to the far right, or drop the new "Geography" field name into the "Rows" section in Sheet 1 and expand the width in order to read the

entire names.



The bracketed numbers are gone, and there are no leading or trailing spaces which, as we've learned in previous tutorials, are problematic because those spaces are viewed as characters, making tasks like grouping problematic.

We're making progress. However, the geographic names are still too inconsistent. Some rows contain cities and provinces divided by a comma. Others just contain the province. And still others contain Canada.

Ideally, Canada, province and city should be in their own, separate columns, which makes grouping easier.

So, we will create a new column for each level of geography using a similar process to the one we just employed.

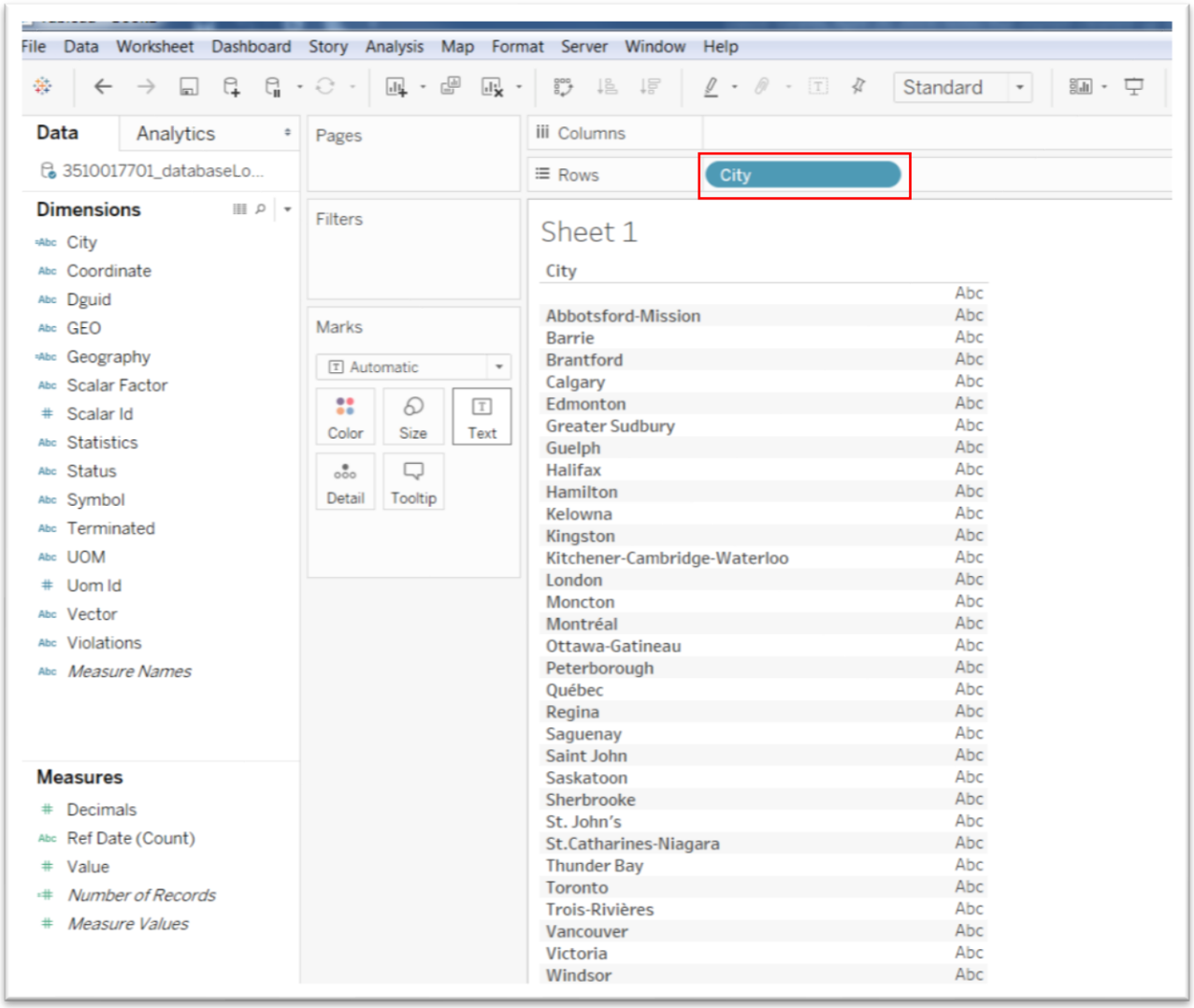
Hover your mouse over the "Geography" tab in "Dimensions", select "Create a Calculated Field" from the drop-down menu.

Name it "City", and then plug in the function you see below.

Here's the logic at play using the logical function called "If" that we learned in Chapter Four's "Specialized Functions in Excel" tutorial.

If there is a comma in the field, it must be "*city, province" (Brantford, Ontario or Calgary, Alberta).* Then, split the field on the comma and return the first token (which is the city). Otherwise, return an empty string. The resulting column will ONLY have city names or will be blank if there is no city name to the left of the comma. As was the case with the split function, you must conclude the syntax with the word "END."

To see the result, drag the “Geography” tab out of “Rows” and replace it with the new “City” column.

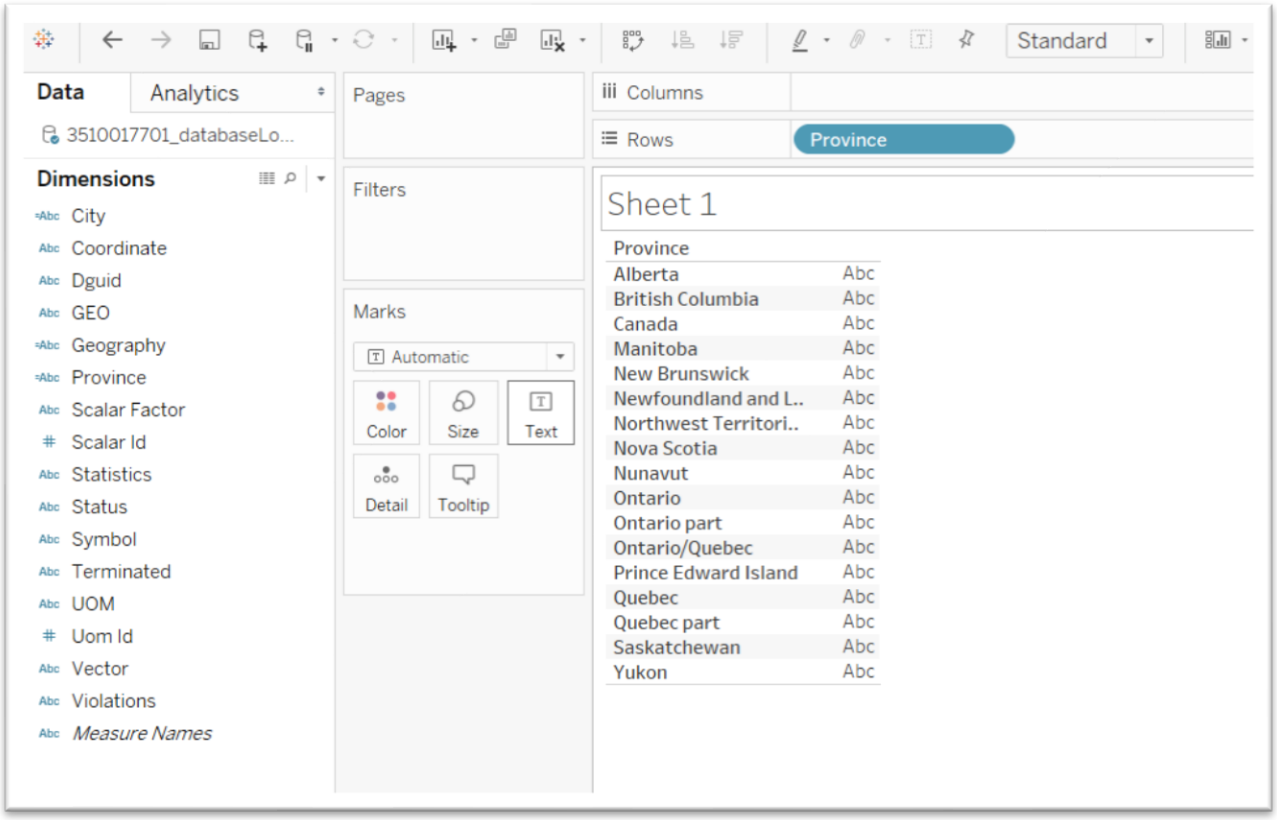


Now we will use another IF function to obtain the provinces.

Hover your cursor over the “City” tab and select the option to create another calculated field we’ll call province.

The function's logic works like this: If the city field is an empty string represented by the quotation mark, then return the contents of the [geography] field, which must be the province. Otherwise, split the geography field on the comma, and return the 2nd token (which is the province). The resulting column will only have province names.

Drag "City" out of Rows, and replace it with "Province".

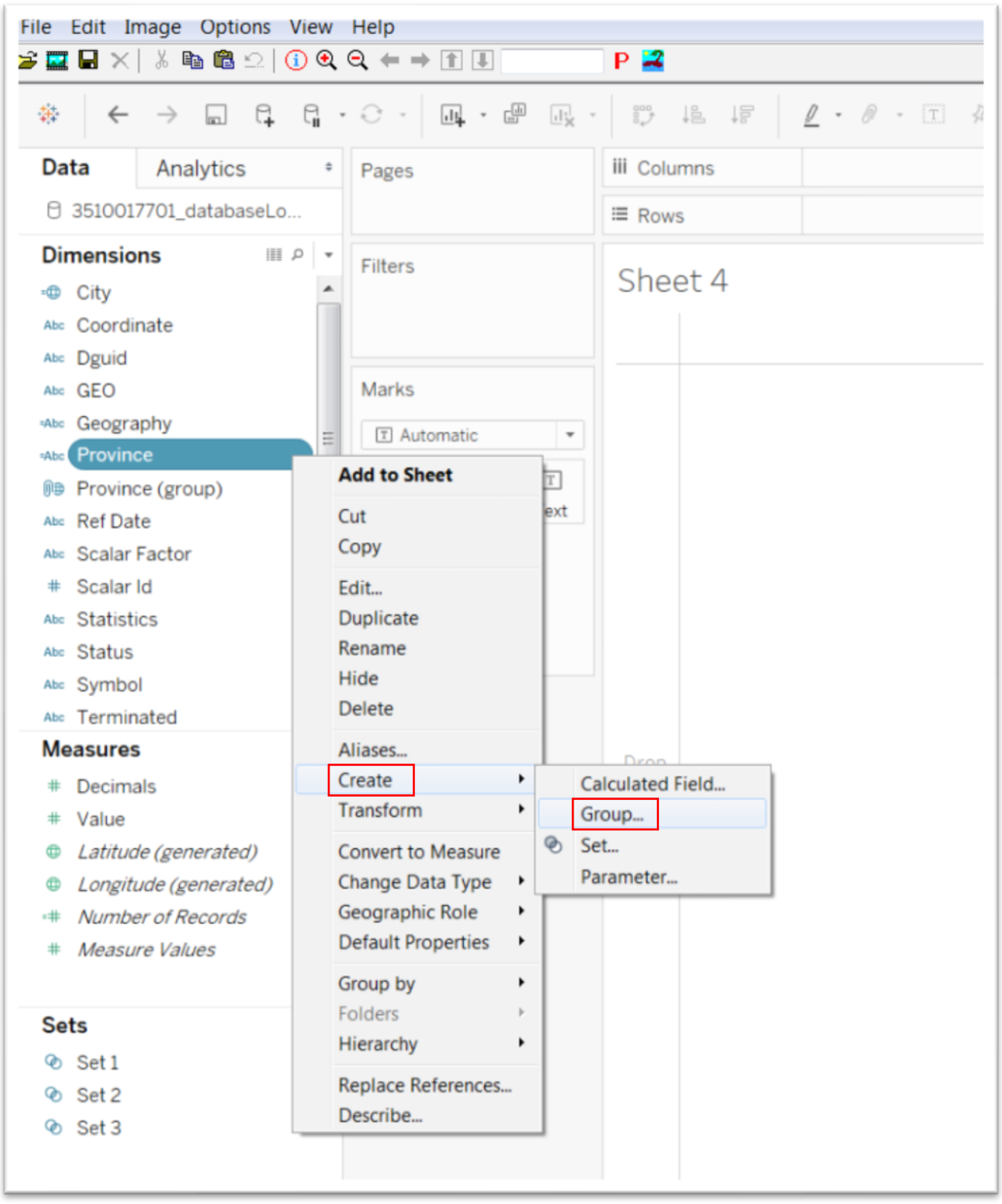


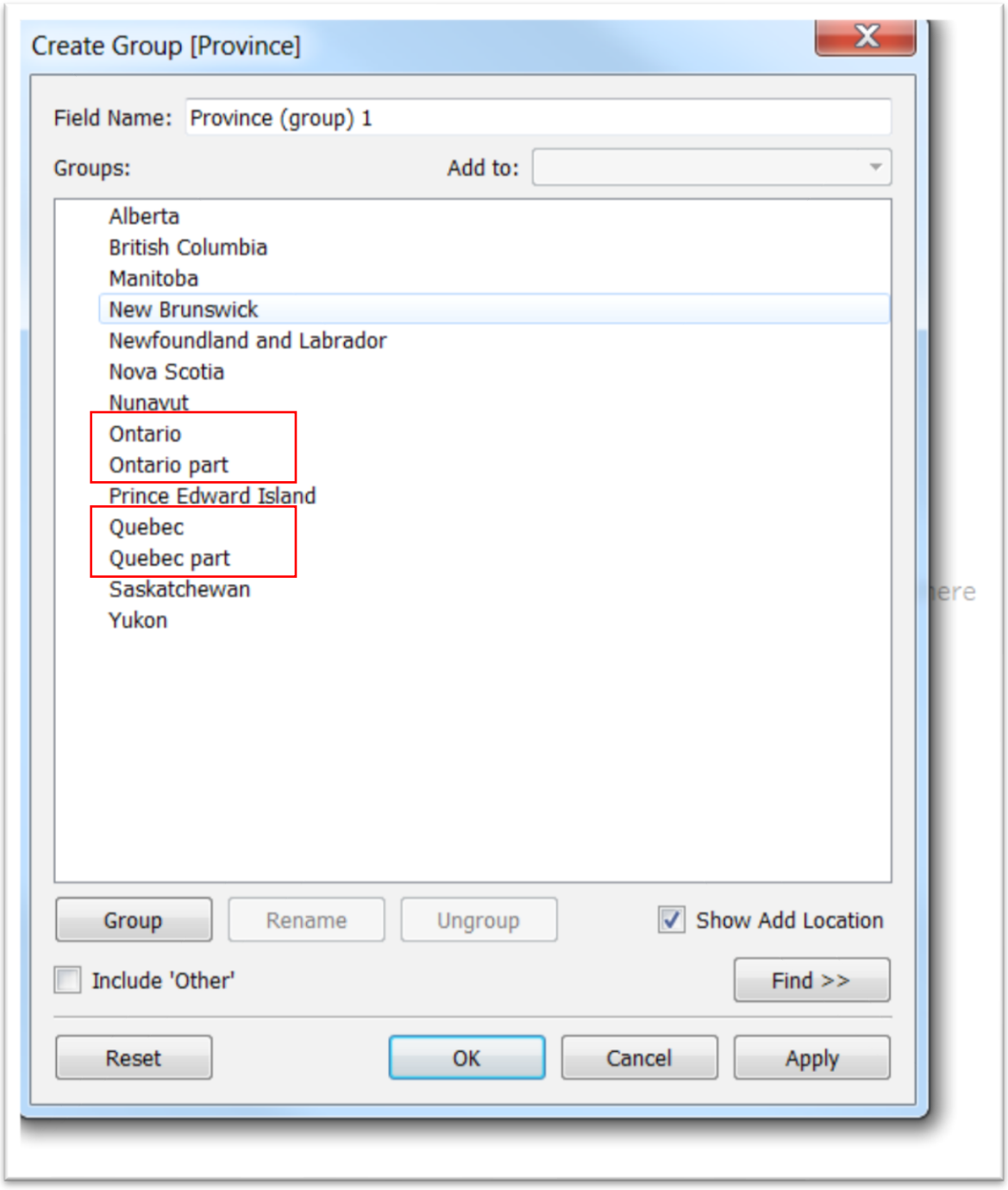
We're almost there. Our familiarity with spreadsheet functions we learned in chapter four should make it easier to understand the syntax of Tableau's functions. If not, give it time to sink in.

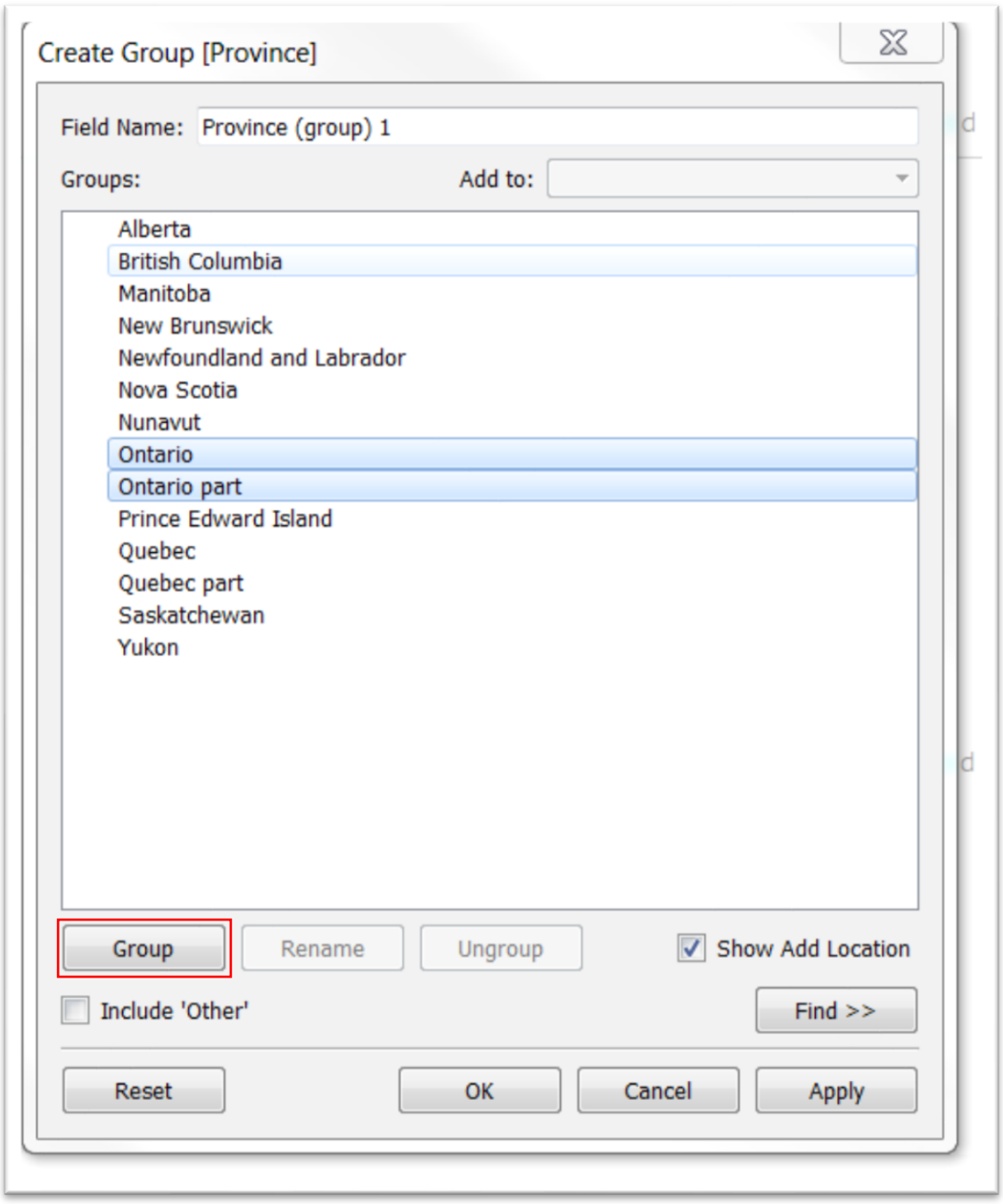
We have a bit more clean-up.

When dealing with the cities of Ottawa and Gatineau, it can get complicated, given that they are located on opposite sides of the Ottawa River. For this reason, Statistics Canada categorizes Ottawa as being located in the "Ontario part" and Gatineau in the "Quebec part." To avoid confusion, we should group "Ontario part" with Ontario and "Quebec part" with Quebec.

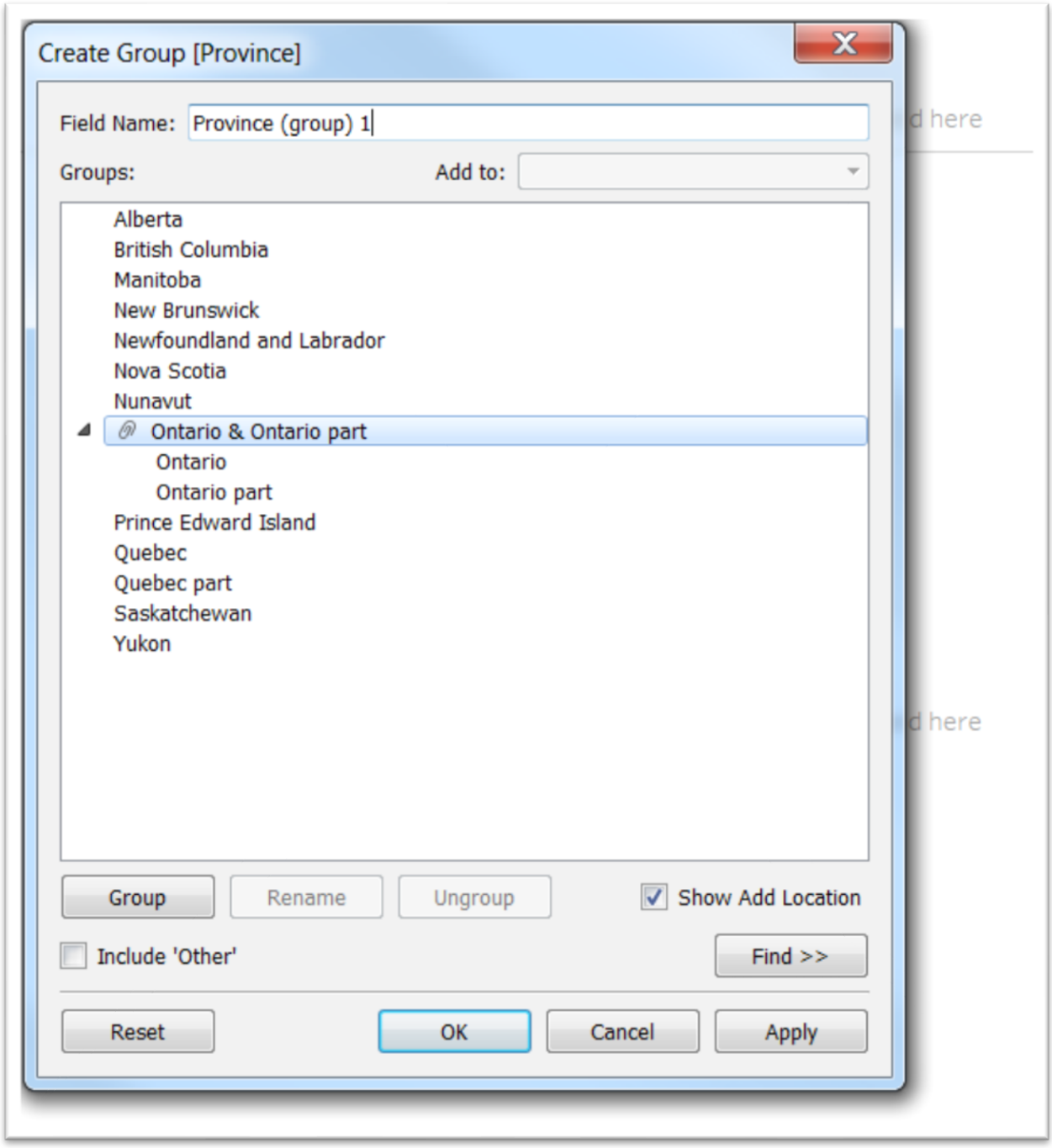
Hover your cursor over the "Province" tab, click the caret to obtain the drop-down menu, go to the "Create" option, and then "Group."


File Edit Image Options View Help
Data
Analytics
3510017701_databaseLo...
Dimensions
City
Coordinate
Dguid
GEO
Geography
Province
Province (group)
Ref Date
Scalar Factor
Scalar Id
Statistics
Status
Symbol
Terminated
Measures
Decimals
Value
Latitude (generated)
Longitude (generated)
Number of Records
Measure Values
Sets
Set 1
Set 2
Set 3
Pages
Filters
Marks
Automatic
Columns
Rows
Sheet 4
Add to Sheet
Cut
Copy
Edit...
Duplicate
Rename
Hide
Delete
Aliases...
Create
Transform
Convert to Measure
Change Data Type
Geographic Role
Default Properties
Group by
Folders
Hierarchy
Replace References...
Describe...
Calculated Field...
Group...
Set...
Parameter...

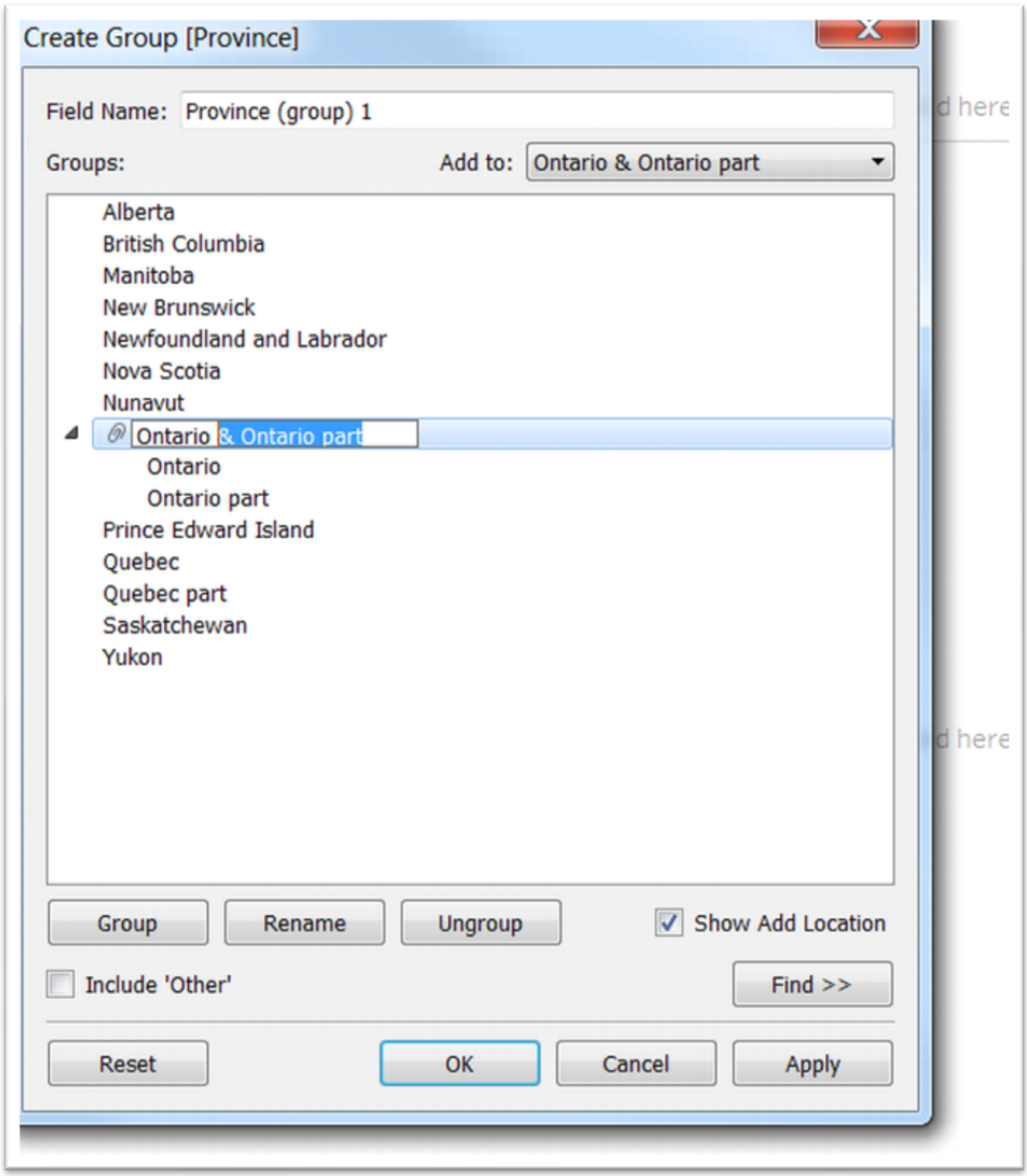

Create Group [Province]
Field Name: Province (group) 1
Groups:
Add to:
Alberta
British Columbia
Manitoba
New Brunswick
Newfoundland and Labrador
Nova Scotia
Nunavut
Ontario
Ontario part
Prince Edward Island
Quebec
Quebec part
Saskatchewan
Yukon
Group
Rename
Ungroup
Show Add Location
Include 'Other'
Find >>
Reset
OK
Cancel
Apply

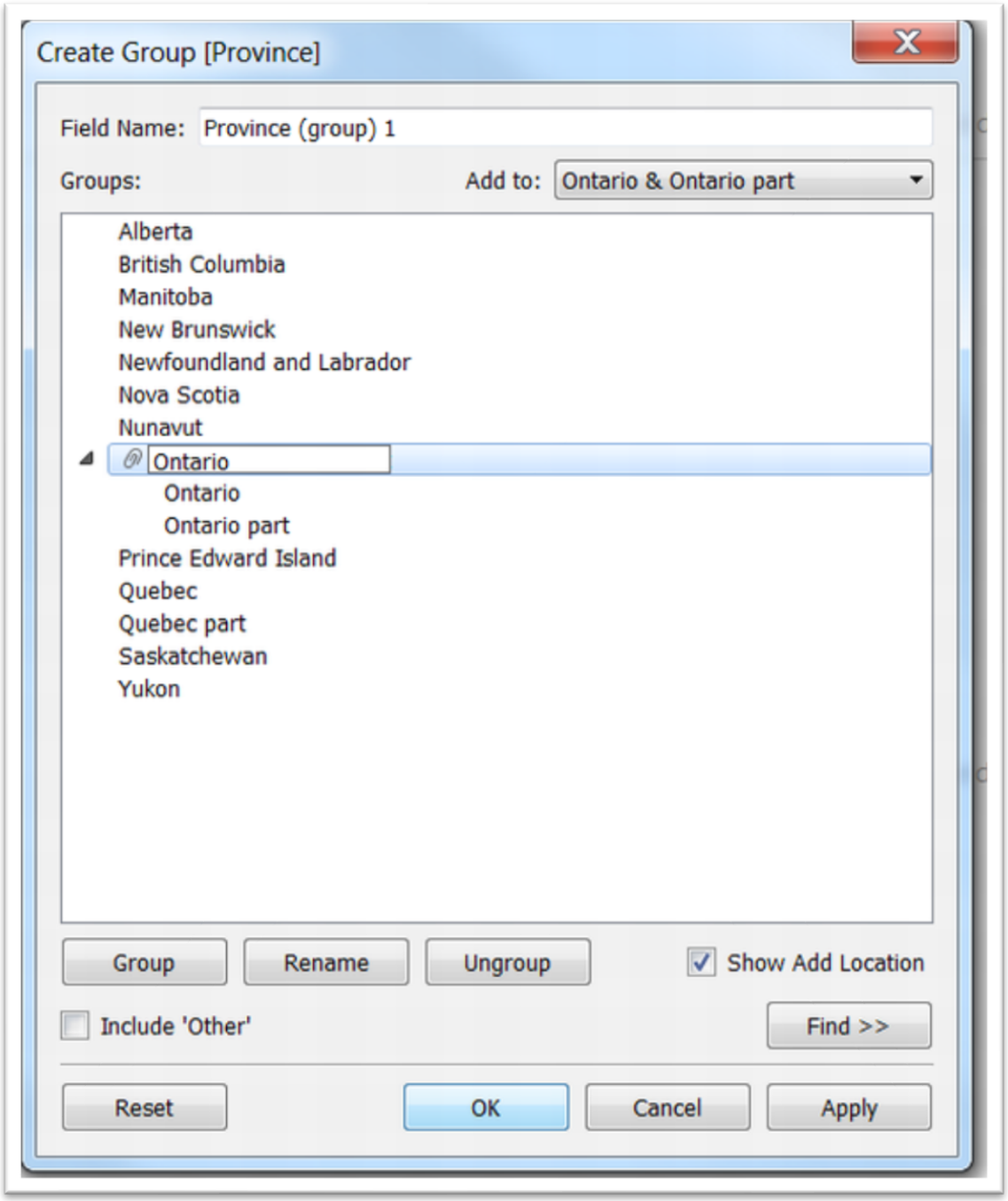

Create Group [Province]
Field Name: Province (group) 1
Groups:
Add to:
Alberta
British Columbia
Manitoba
New Brunswick
Newfoundland and Labrador
Nova Scotia
Nunavut
Ontario
Ontario part
Prince Edward Island
Quebec
Quebec part
Saskatchewan
Yukon
Group
Rename
Ungroup
Show Add Location
Include 'Other'
Find >>
Reset
OK
Cancel
Apply

After simultaneously selecting “Ontario” and “Ontario part”, click the “Group” tab.

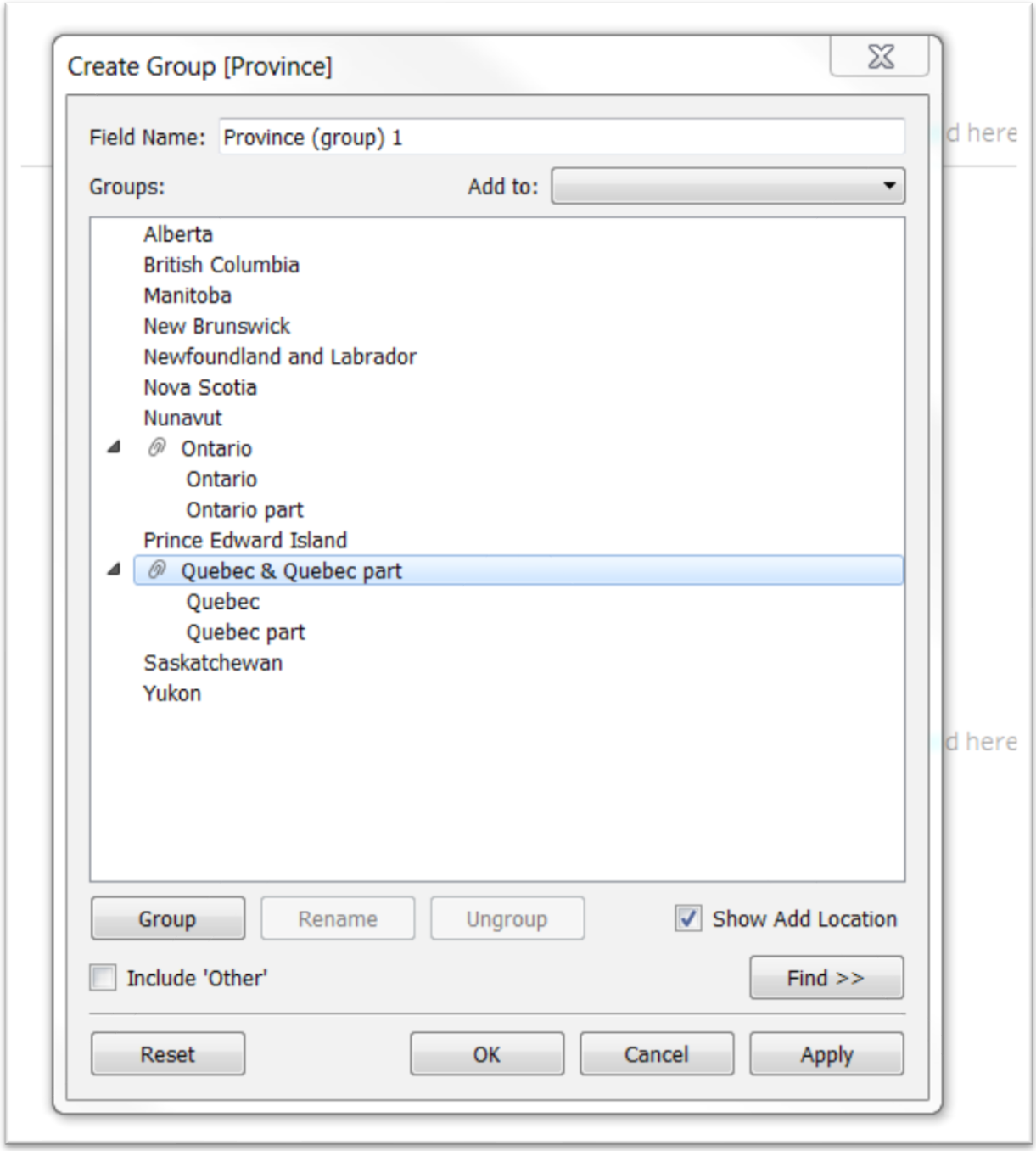


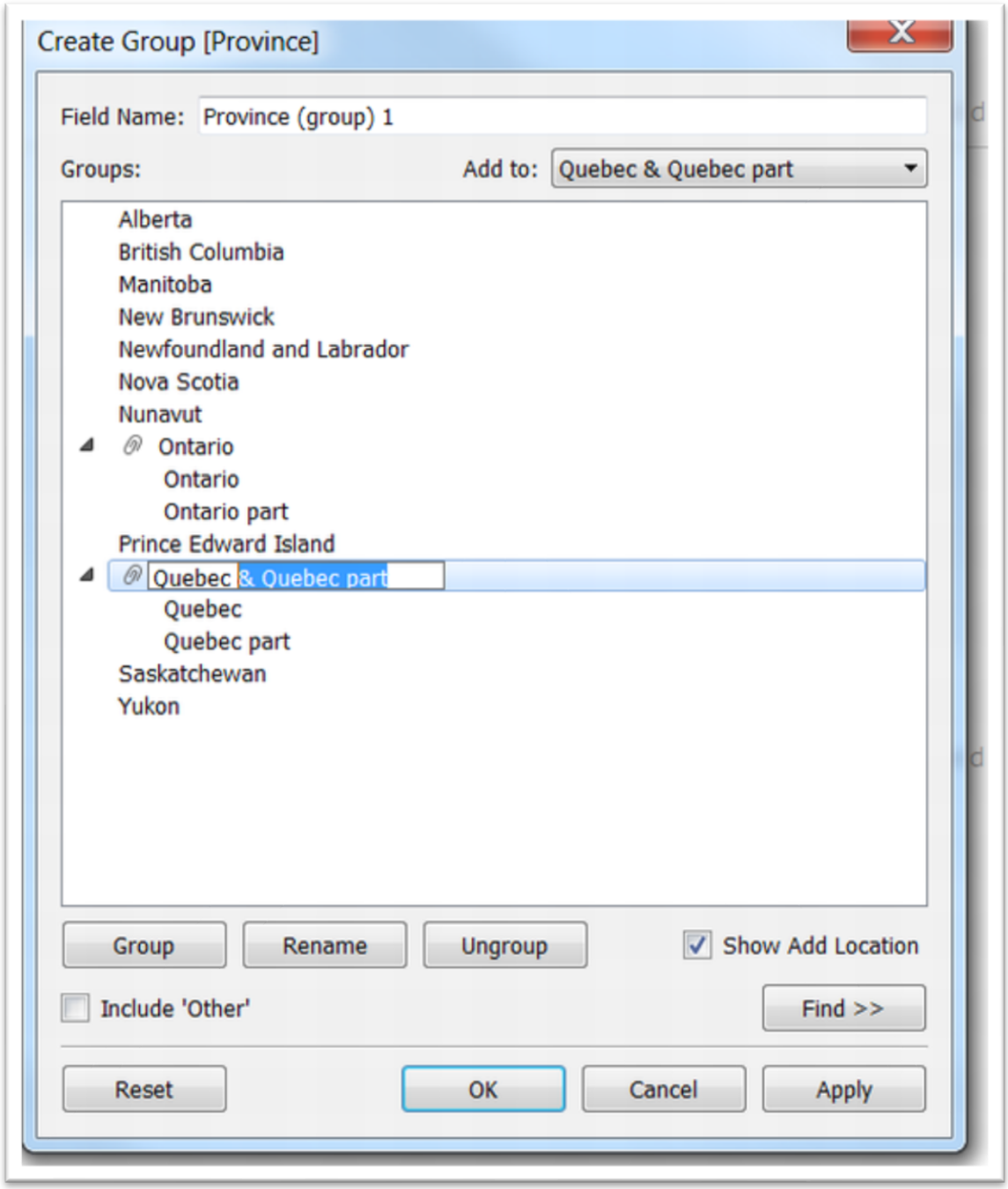
The paper clip icon indicates a new group, which we simply name “Ontario, by clicking on the new label and deleting everything to the right of the word “Ontario”.

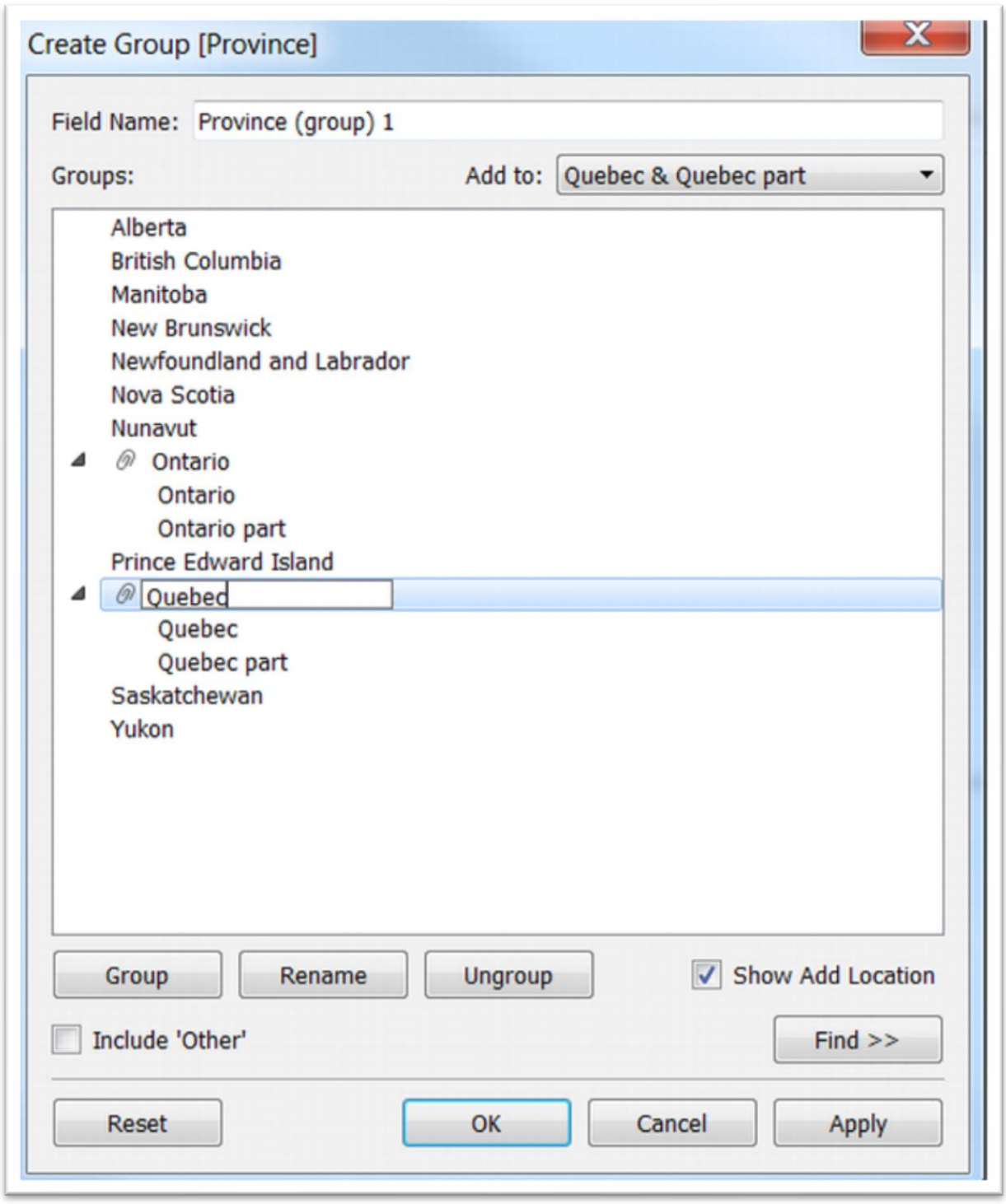

Create Group [Province]
Field Name: Province (group) 1
Groups:
Add to: Ontario & Ontario part
Alberta
British Columbia
Manitoba
New Brunswick
Newfoundland and Labrador
Nova Scotia
Nunavut
Ontario & Ontario part
Ontario
Ontario part
Prince Edward Island
Quebec
Quebec part
Saskatchewan
Yukon
Group
Rename
Ungroup
Show Add Location
Include 'Other'
Find >>
Reset
OK
Cancel
Apply


Create Group [Province]
Field Name: Province (group) 1
Groups:
Add to: Ontario & Ontario part
Alberta
British Columbia
Manitoba
New Brunswick
Newfoundland and Labrador
Nova Scotia
Nunavut
Ontario
Ontario
Ontario part
Prince Edward Island
Quebec
Quebec part
Saskatchewan
Yukon
Group
Rename
Ungroup
Show Add Location
Include 'Other'
Find >>
Reset
OK
Cancel
Apply

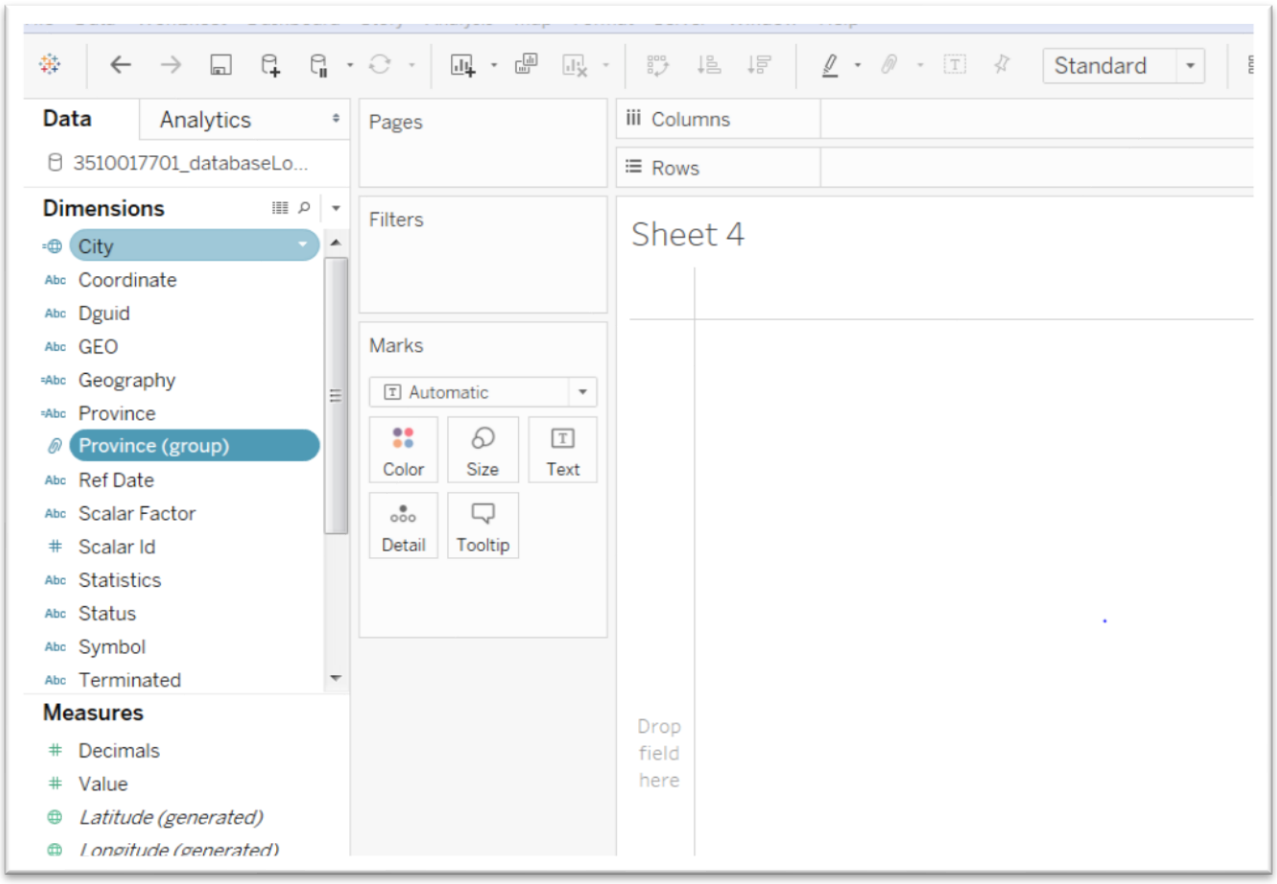
Repeat the same process for “Quebec” and “Quebec part.”



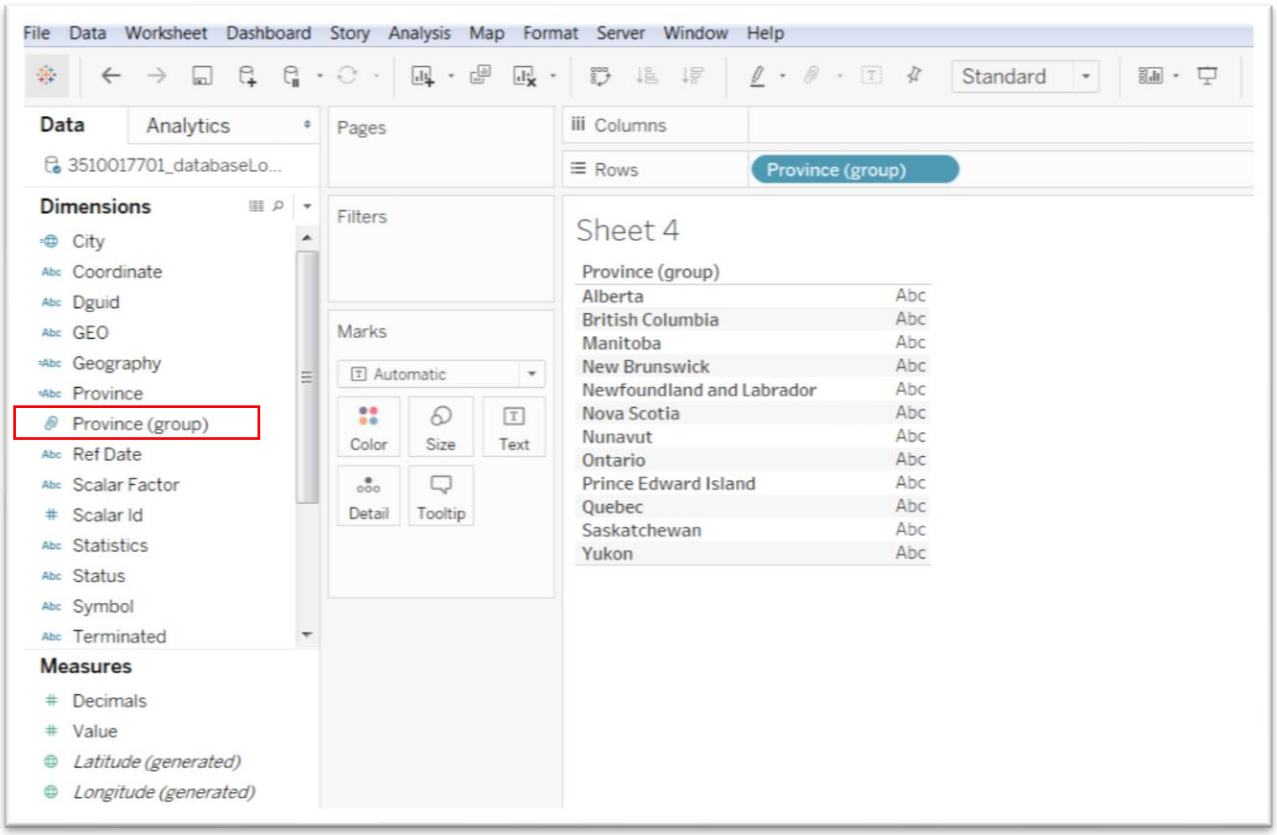

Create Group [Province]
Field Name: Province (group) 1
Groups:
Add to: Quebec & Quebec part
Alberta
British Columbia
Manitoba
New Brunswick
Newfoundland and Labrador
Nova Scotia
Nunavut
Ontario
Ontario
Ontario part
Prince Edward Island
Quebec & Quebec part
Quebec
Quebec part
Saskatchewan
Yukon
Group
Rename
Ungroup
Show Add Location
Include 'Other'
Find >>
Reset
OK
Cancel
Apply


Create Group [Province]
Field Name: Province (group) 1
Groups:
Add to: Quebec & Quebec part
Alberta
British Columbia
Manitoba
New Brunswick
Newfoundland and Labrador
Nova Scotia
Nunavut
Ontario
Ontario
Ontario part
Prince Edward Island
Quebec
Quebec
Quebec part
Saskatchewan
Yukon
Group
Rename
Ungroup
Show Add Location
Include 'Other'
Find >>
Reset
OK
Cancel
Apply

This process produces yet another column, “Province (group).”



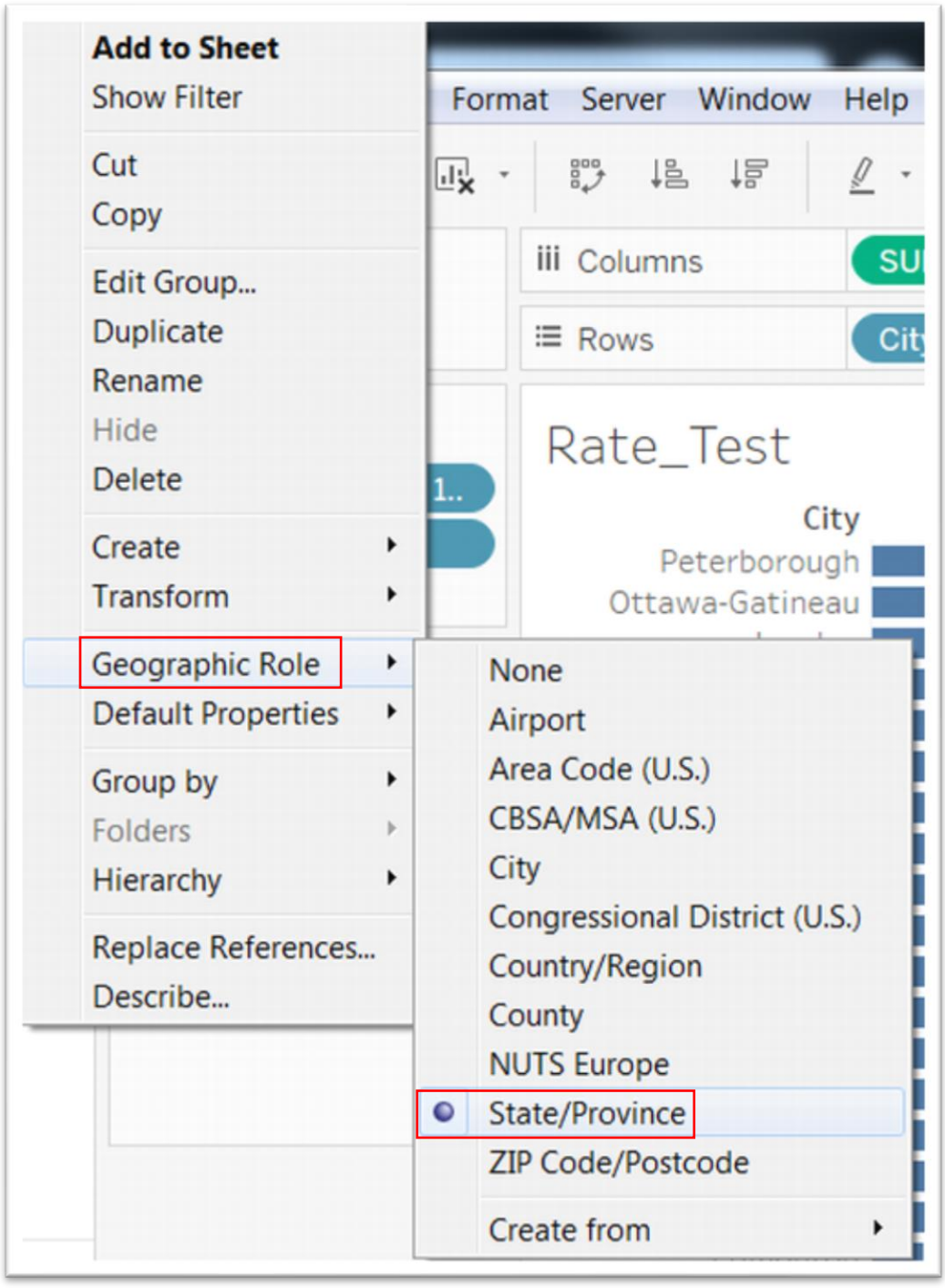
Drag the new column into “Rows” to see the result.

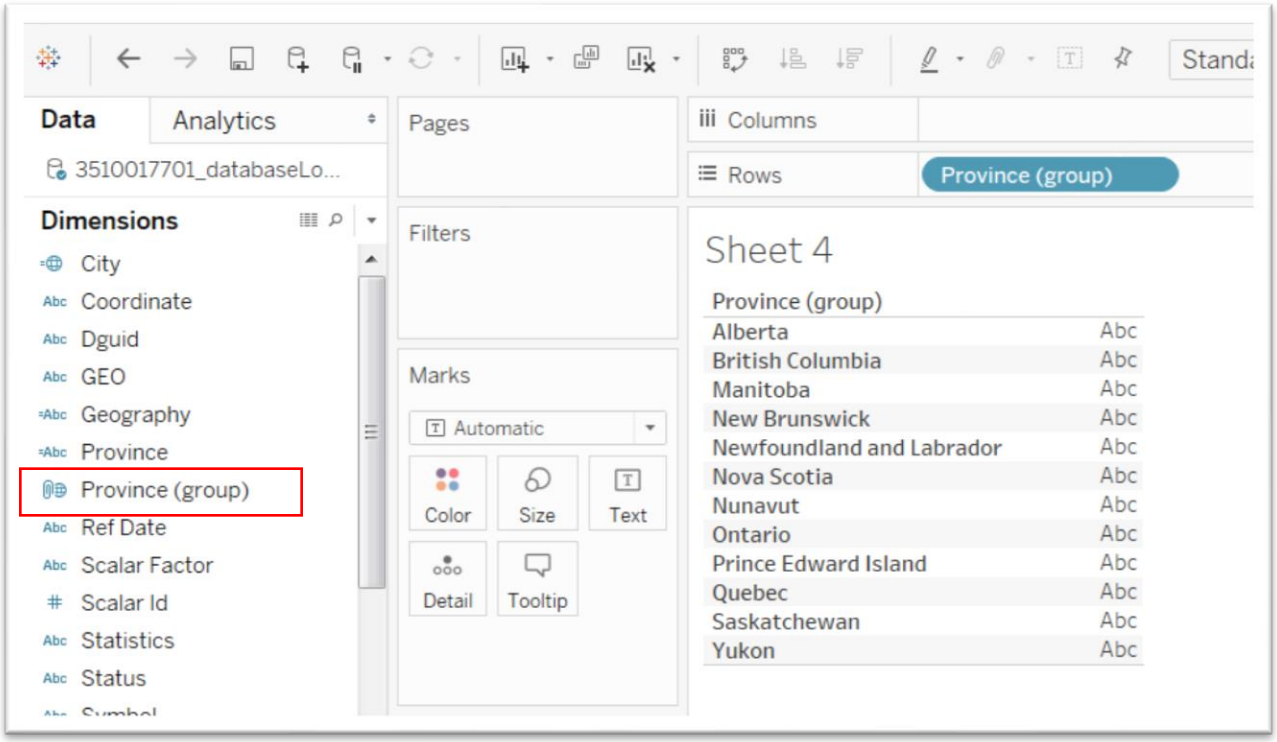


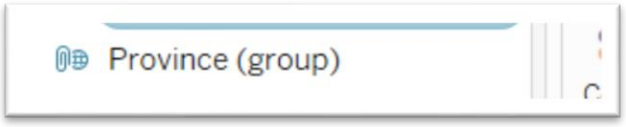
There is only ONE Ontario, and ONE Quebec. You’ll notice that Tableau has yet to assign geographic coordinates to the provincial names in the new column.

To do this, hover over the “Province (group)” icon to obtain the shortcut menu.

Select “Geographic Role,” and then “State/Province”.







The globe icon to the right of the paper clip indicates that Tableau has now assigned geographic coordinates to the provinces.

Task 3: Creating maps and bar graphs

Now that we have created new columns with geographic locations, it's time to create a map, which will become a key part of our dashboard, as we'll see in the next section.

Open a new tab.

Drag “Province (group)” from the Dimensions pane into the data frame to the right.

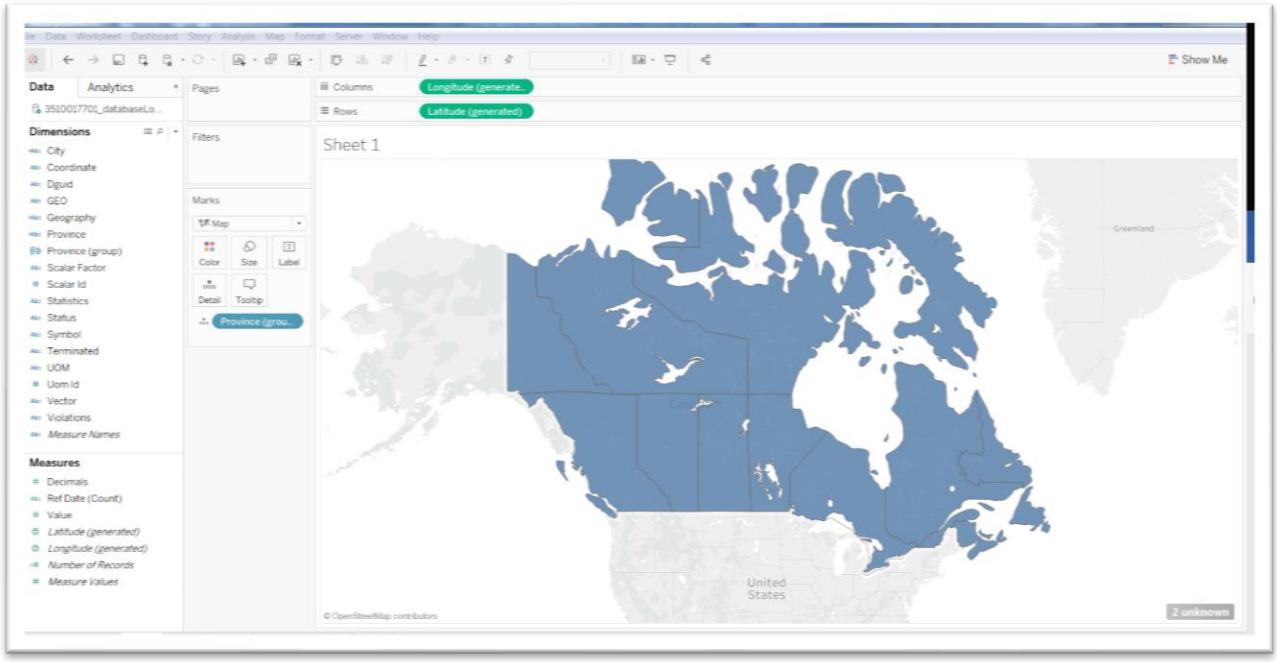
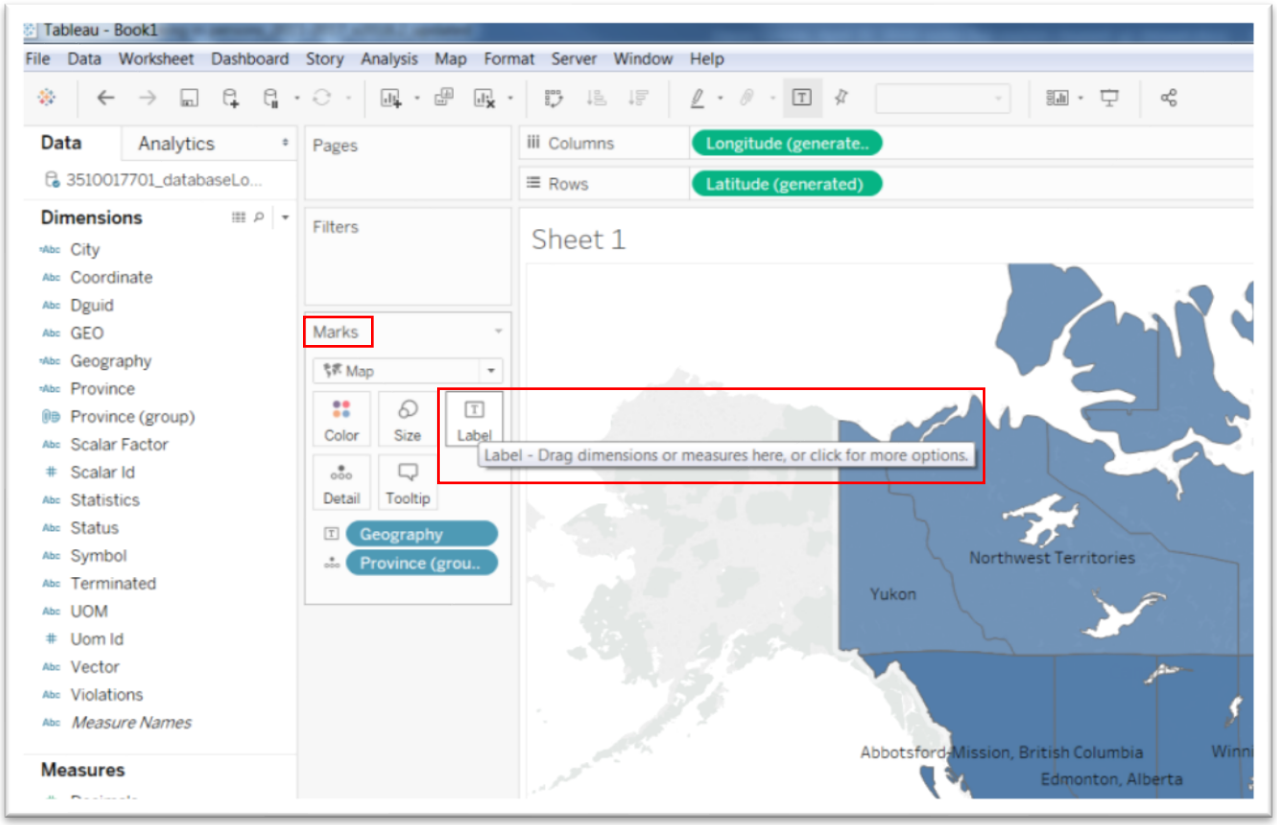
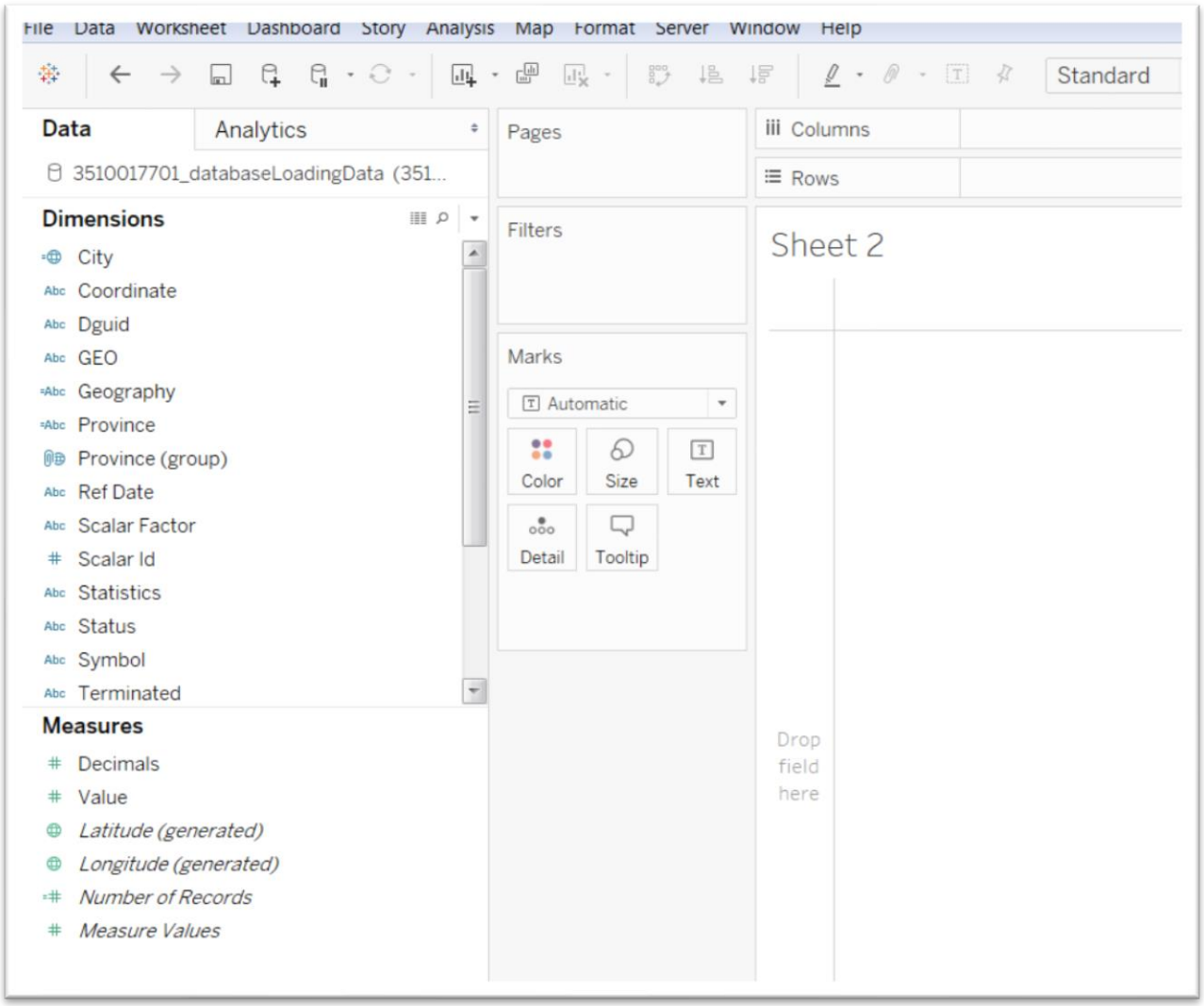


Tableau has automatically assigned the longitude and latitude coordinates in the columns and rows, respectively.

Label the provinces by dragging the “Province (group)” tab into the “Label” section under “Marks”.



Let’s call this worksheet “Provinces_Group”.



Click the next tab to create a new worksheet.

This should look familiar because, like the pivot table that we learned in chapter four of The Data Journalist, Tableau easily summarizes data for analysis and visualization.

On the left side of the screen, you will see panes for what Tableau calls "Dimensions" and "Measures." Dimensions are categories of information. Measures are numbers.

If you find that a number (a measure) has been misclassified as a dimension, just drag the field from the dimension to the measures area (the opposite applies as well), or vice-versa.

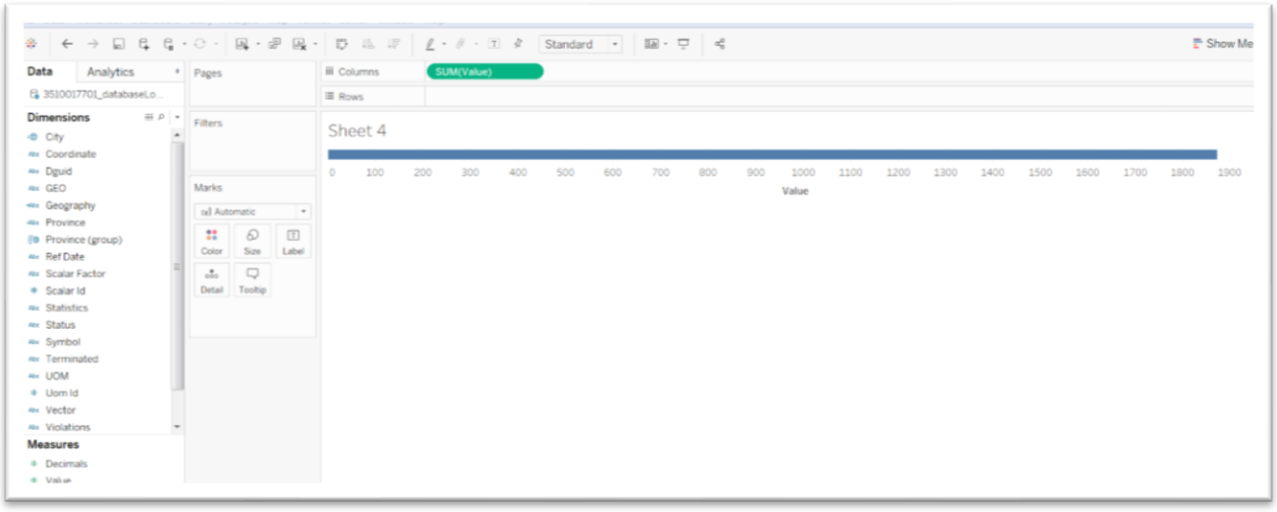
As we saw on the previous worksheet, the right side is a canvas, which will contain your visualizations.

Like Excel and other spreadsheet programs, Tableau uses the term "worksheet" to refer to an area that contains data.

We want to create two additional worksheets: one for the number of offences and a second for the rate.

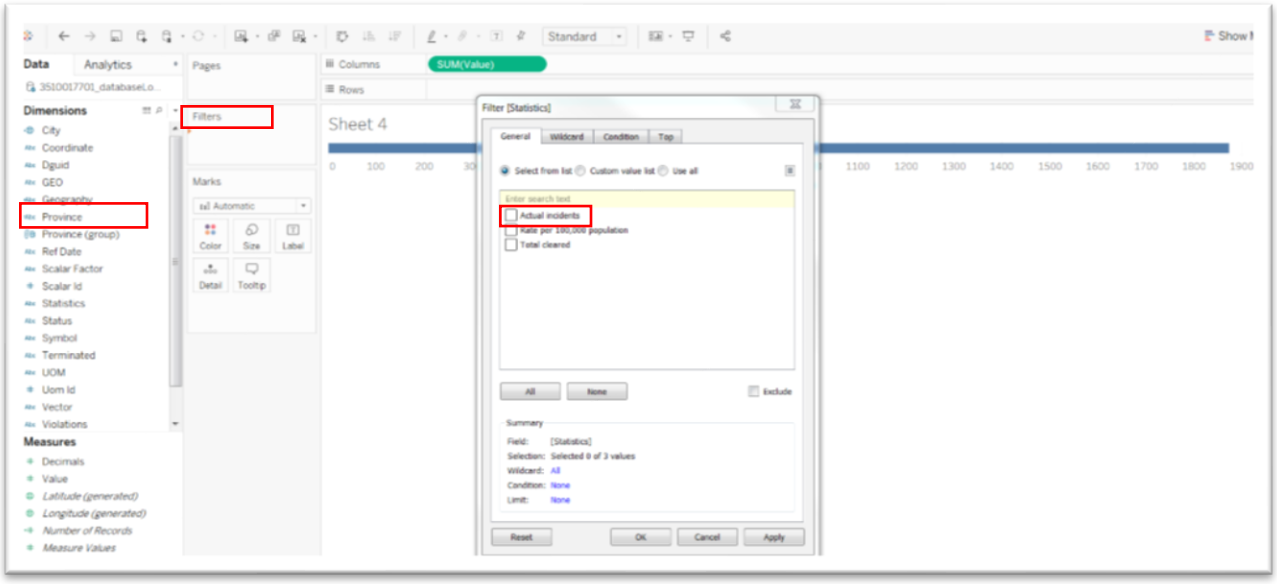
Drag the “Value” column under the “Measures” category into “Columns”, which produces raw, unfiltered numbers.

You’ll recall that the “Numbers” category contains three separate categories: the actual number of offences; the rate; and the number of cases cleared, or that were solved. Tableau has lumped them all together to produce inflated, aggregate numbers which will only make sense after they’re filtered.

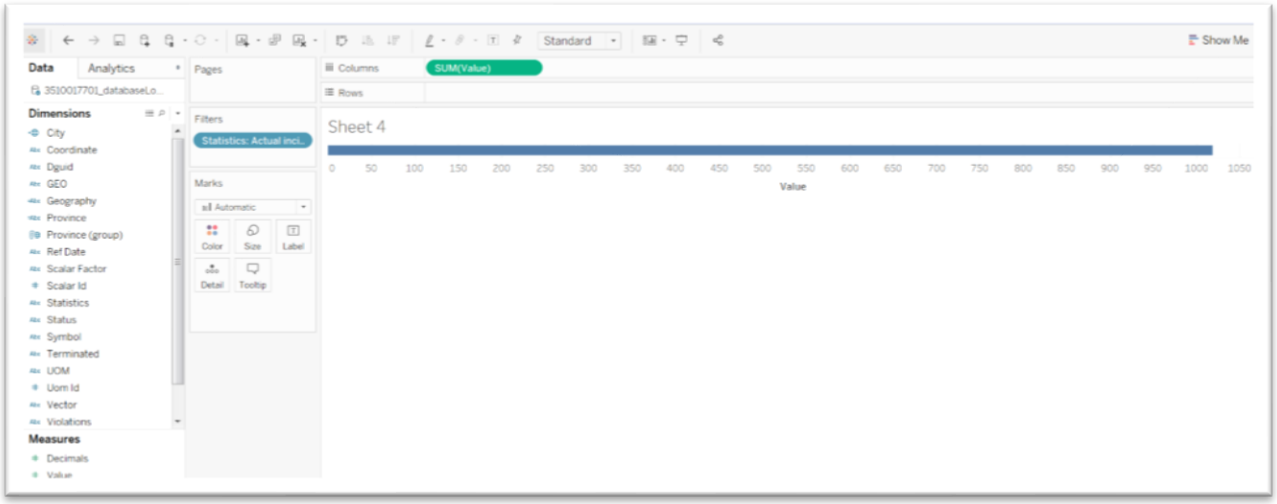


To make sense of the aggregate number, it must be filtered to reflect the one we want for this worksheet. In this case, we’re interested in the “actual” number.

Drag the “Statistics” column into the “Filters” section to its immediate right, which produces a dialogue box.



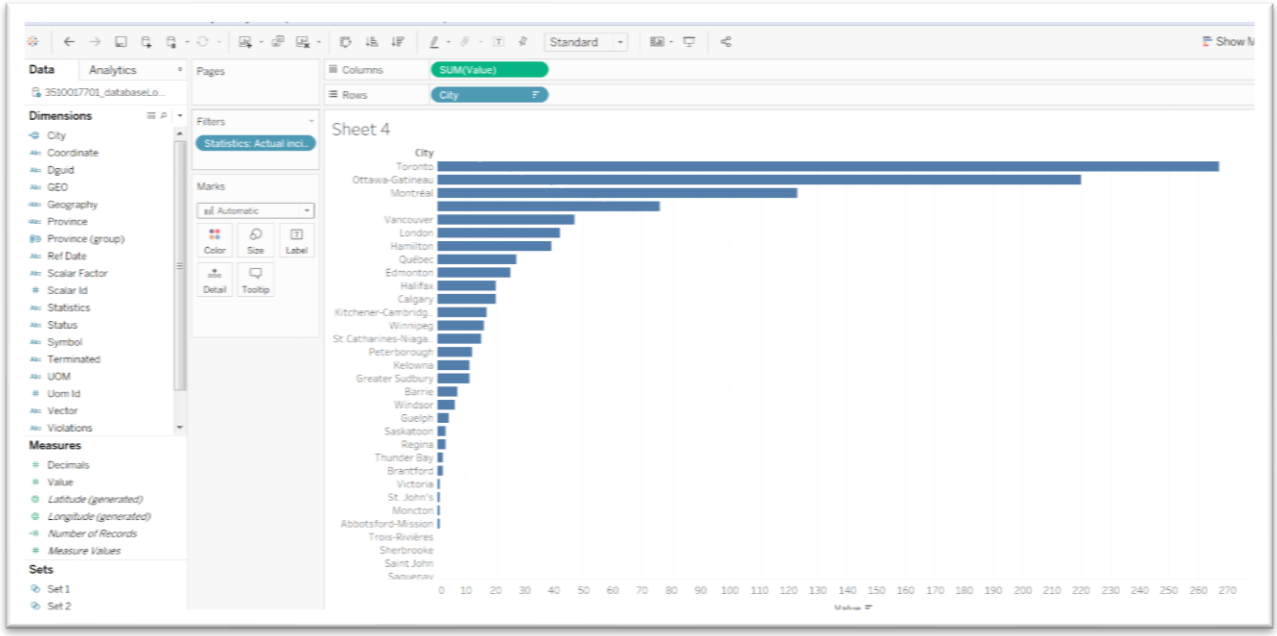
Select “Actual Incidents”, and then the “Apply” and “OK” tabs.



Once filtered, the total numbers are noticeably smaller.

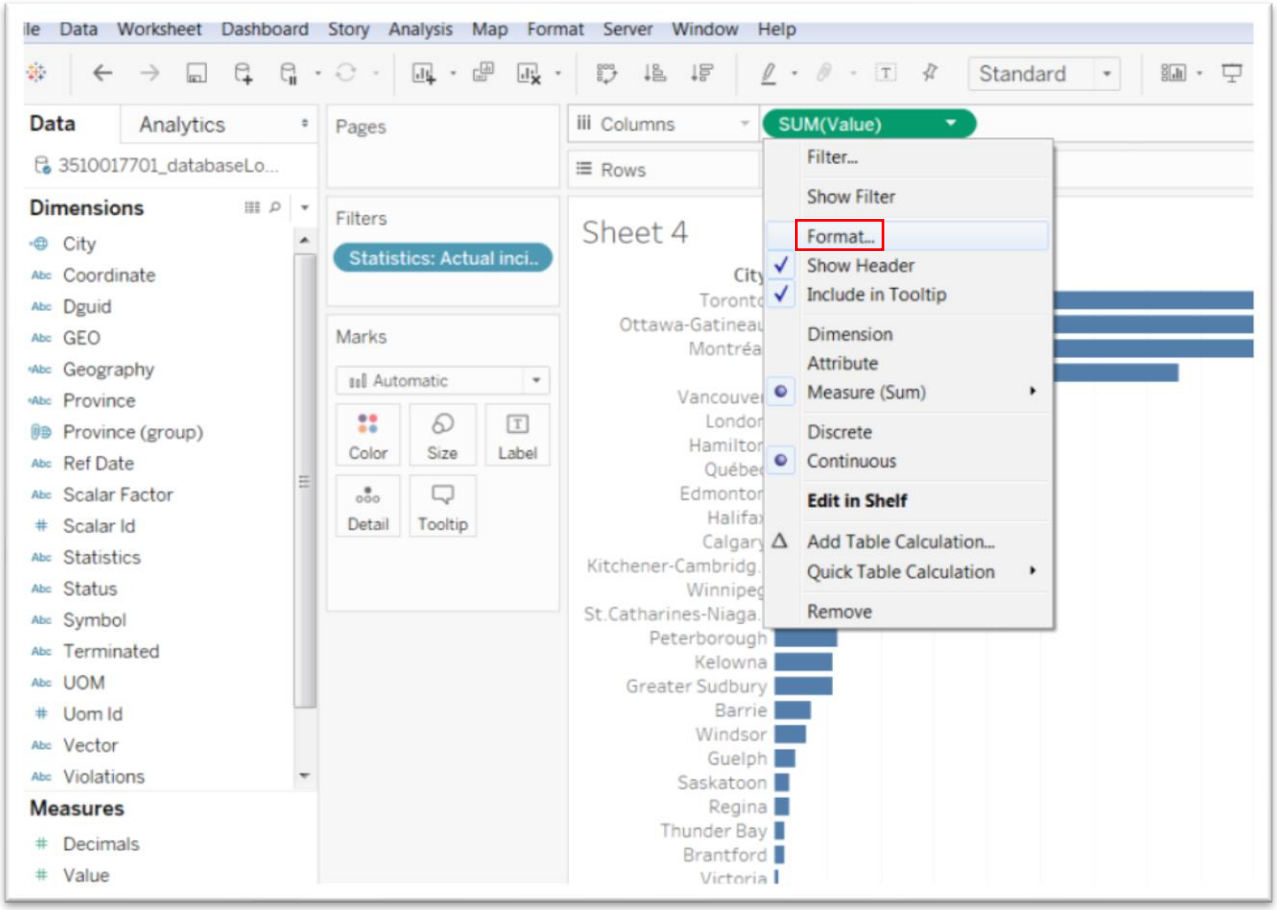
As is the case in a pivot table, we can now sub-divide the numbers by city. To do so, drag the new “City” column we’ve created into the Rows section, and sort

values in descending order.

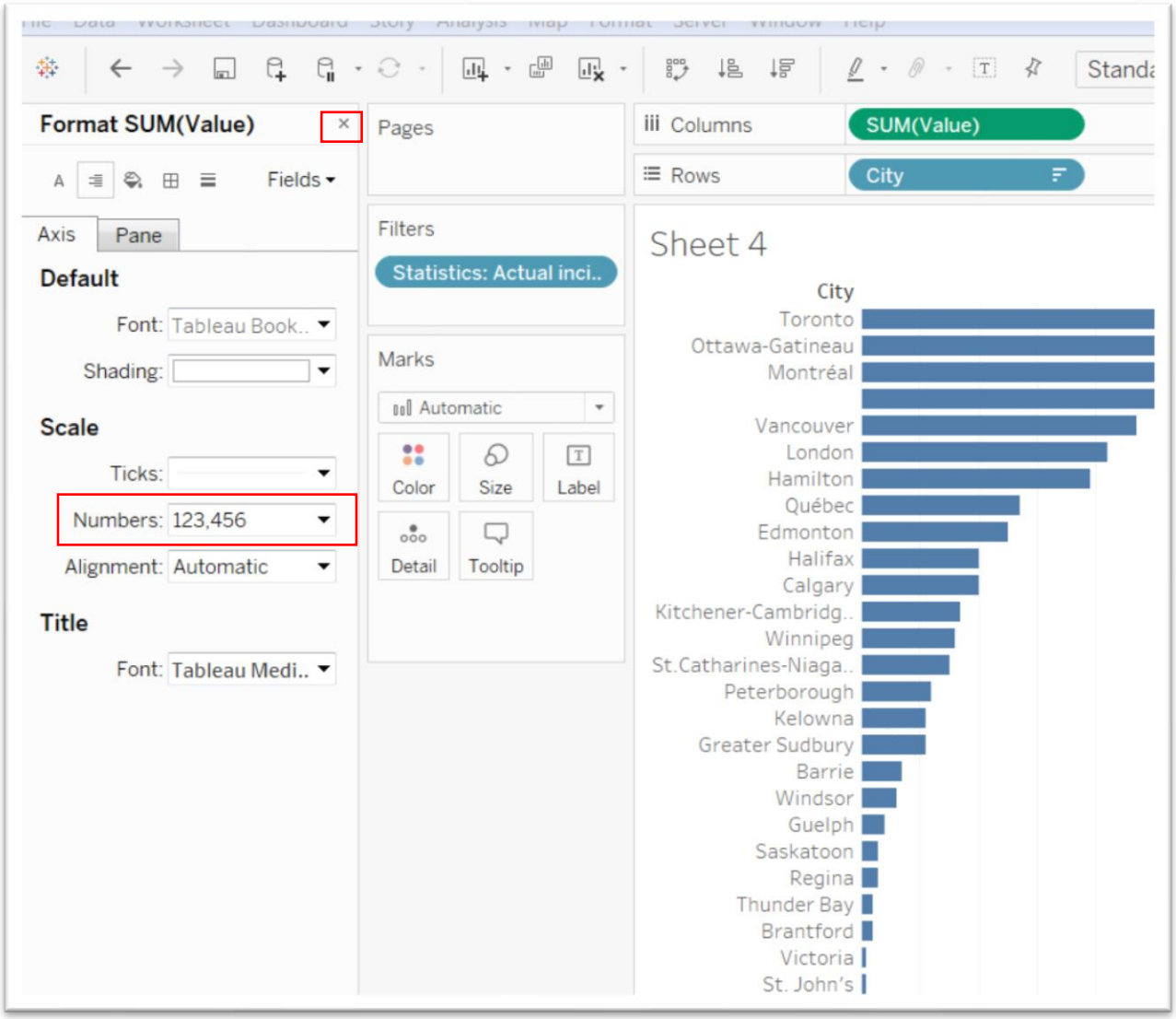


No surprise here. Toronto is Canada's largest city. So, it makes sense that it would have the largest number. The numbers may need a bit of formatting to remove the decimal place.

Click on the “SUM(Value)” tab in Columns, to obtain the drop-down menu.

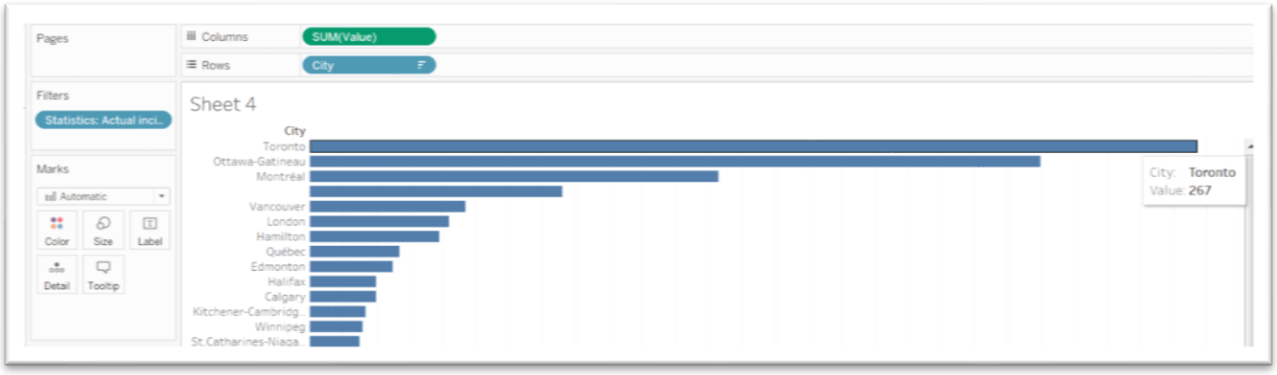


Select the “Format” option, which produces menu to the left.



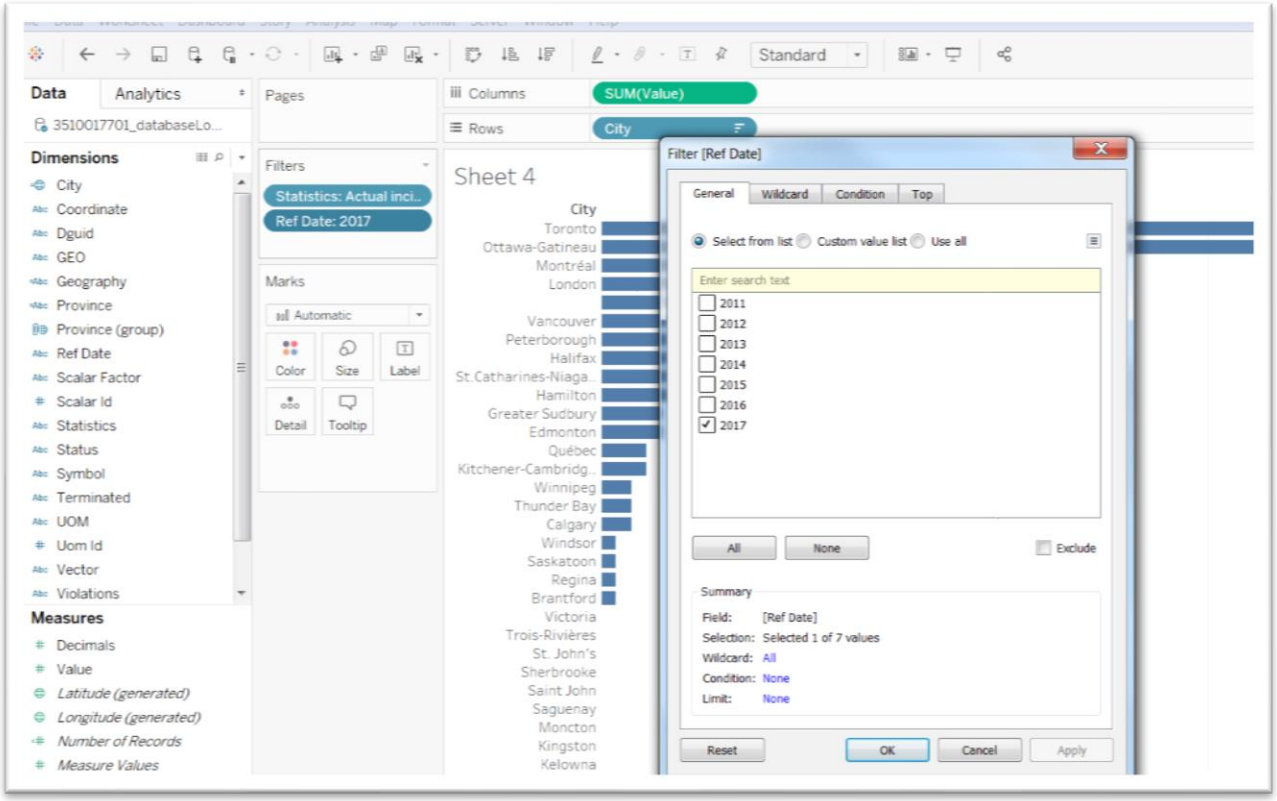
Select the caret to the right of the "Numbers" option, and then "Number (Standard)" to lose the decimal places. (Note: You can also choose the "Custom" option to manually remove the decimal places. The choice is yours)

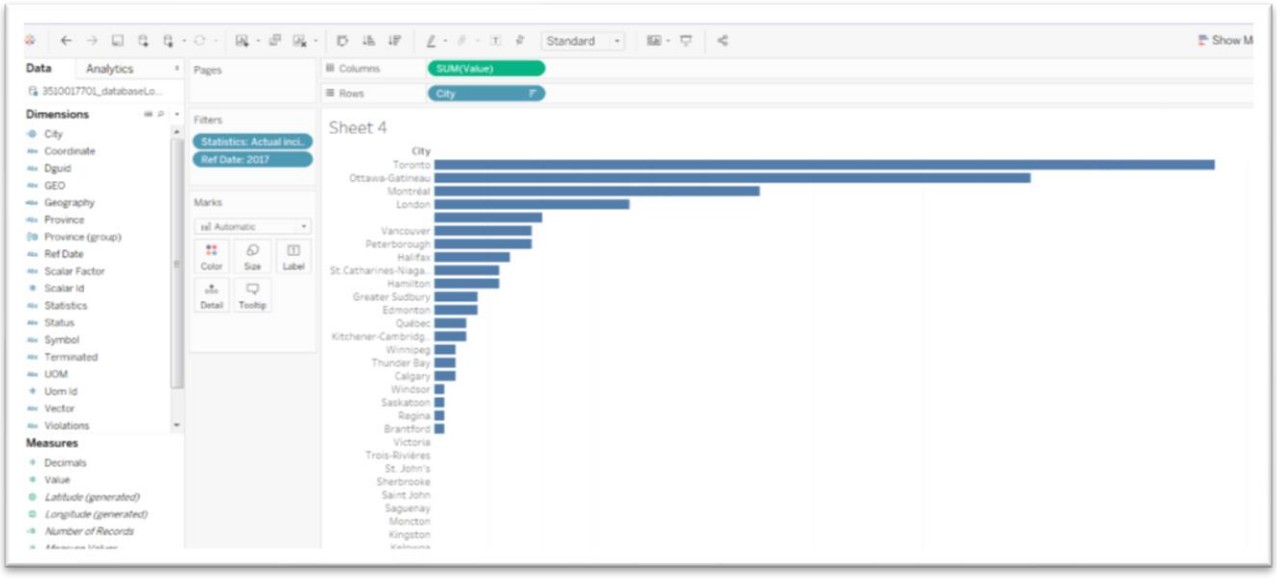
Once you've made the selections, close the menu by clicking on the "X" at the top right corner.



Much better. Now before we rename the worksheet and move on to the next step, let's limit the year, in this case 2017. (Note: if you are using a newer dataset, the most recent year may be updated to 2018. If this is the case, then filter for 2018.)

Drag the Year column from the “Dimensions” category into the filter.

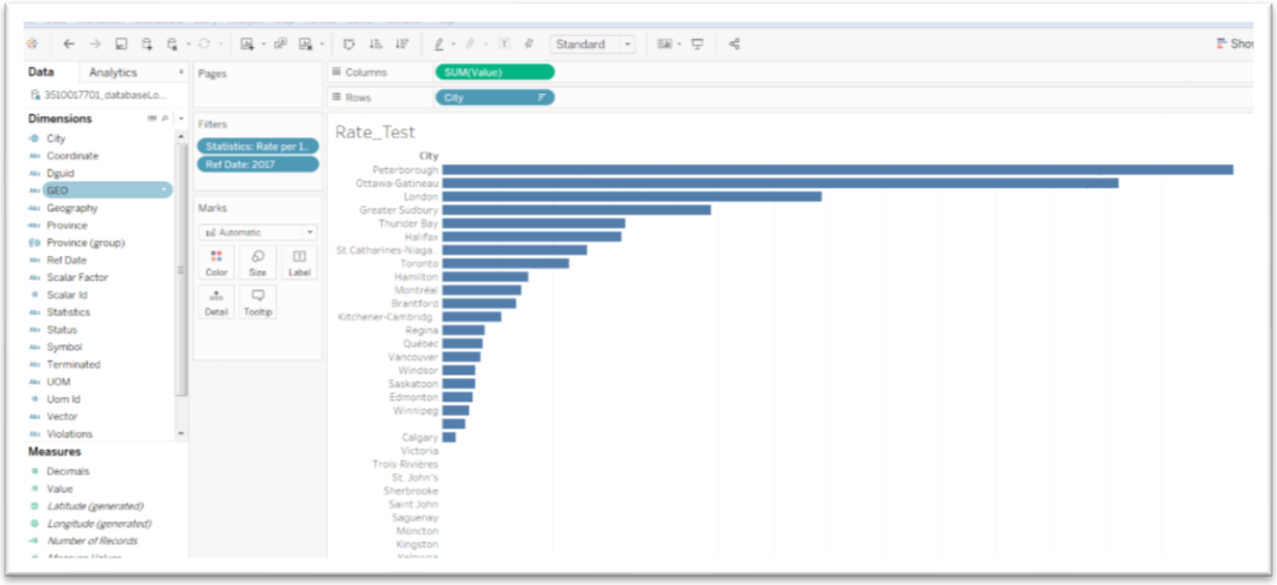


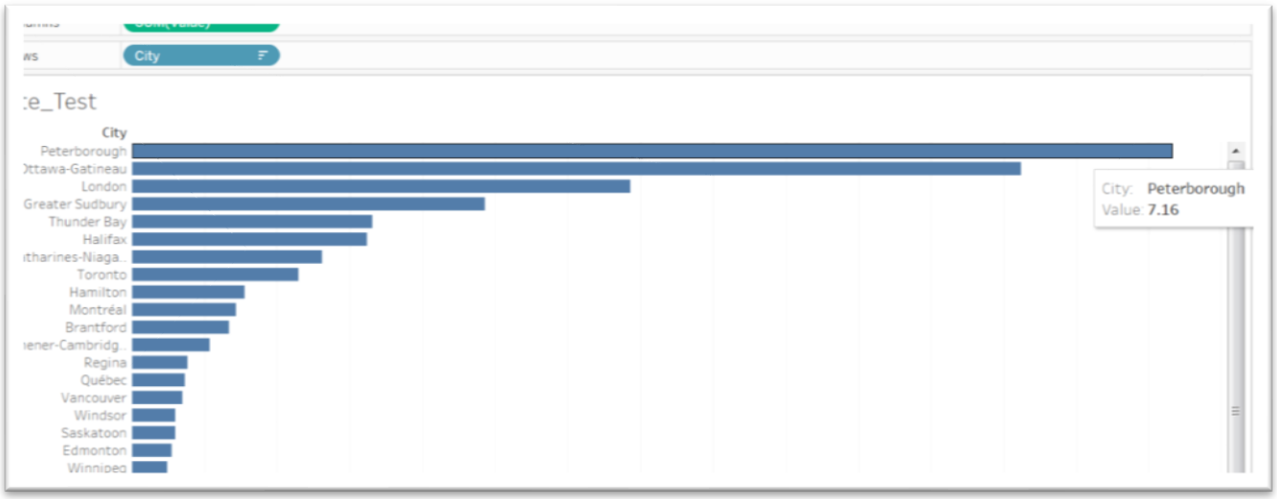


Click the worksheet, rename it “Actual_Numbers”, and then select tab to the right to open a new worksheet.

Repeat the same process that we used to get the numbers into the first worksheet, but this time filter “Statistics” for “Rate”.

When reformatting the numbers, leave two decimal places, which matter when comparing rates.





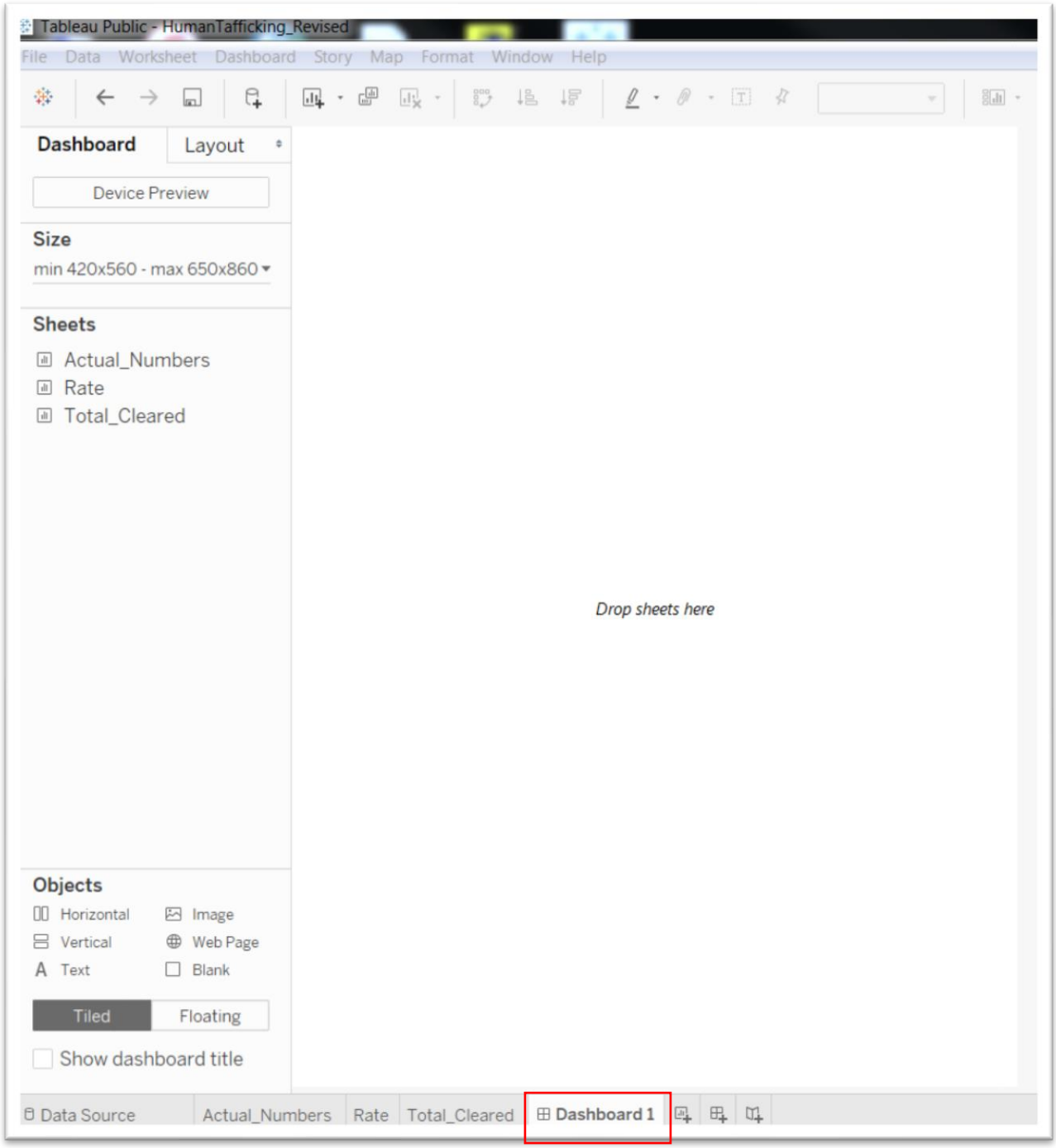
Rename the worksheet “Rate.”

Now it’s time to use a dashboard to show the three visualizations we’ve made.

While Toronto had the highest number of incidents in 2017, Peterborough had the highest rate. Interesting.

Task 4: Creating an interactive dashboard.

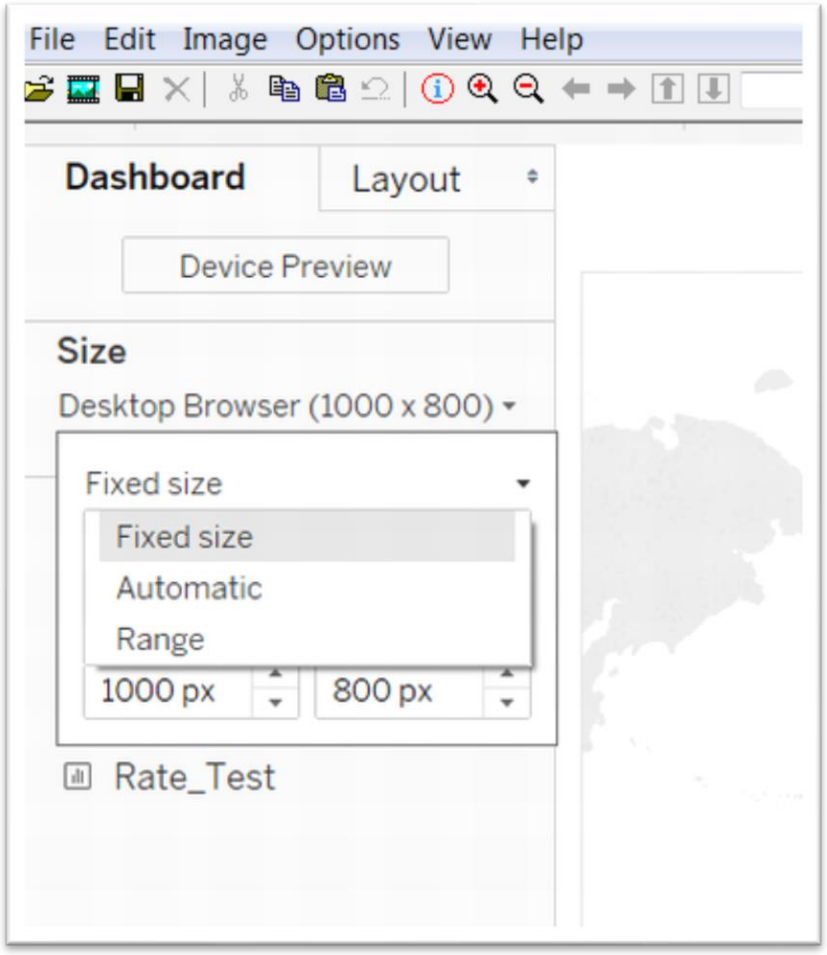
Click on the “dashboard” tab at the bottom.



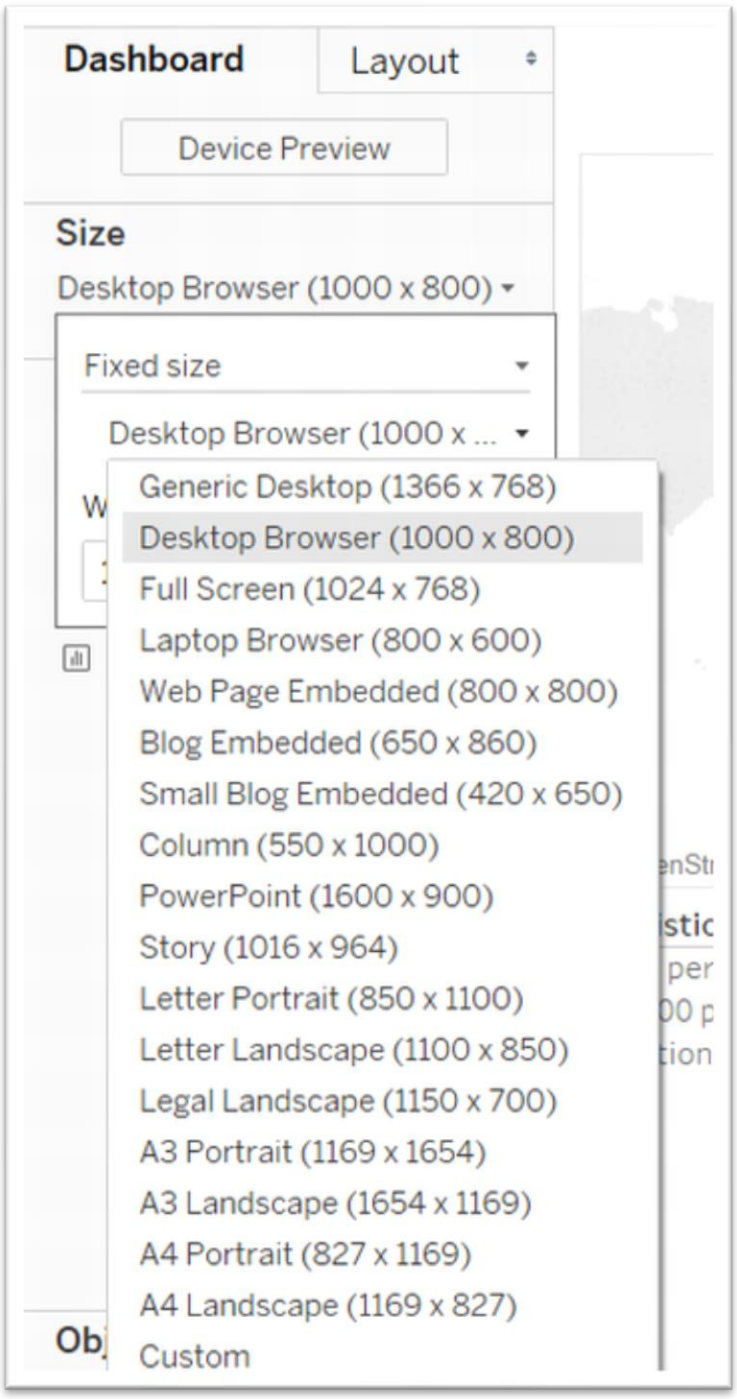
The data pane to the left is replaced by the dashboard pane.

Before we build the dashboard, just a word about the sizing. It's important to account for the kind of device people will be using to see your visualization.

There are three main options in the "Size" area: Fixed size; Automatic and Range.

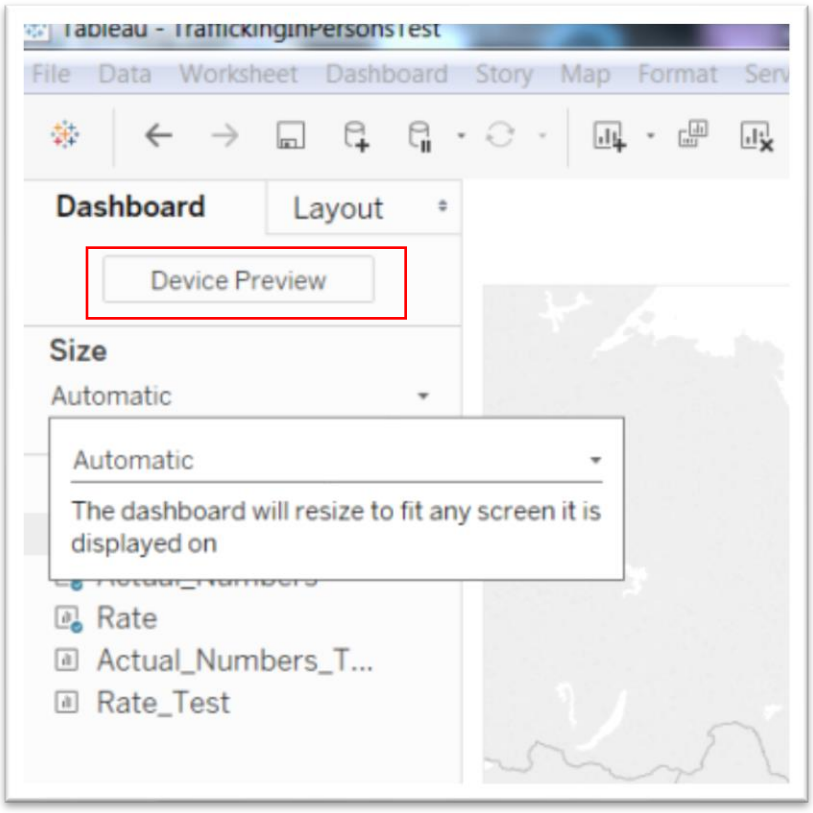


"Fixed size" produces a list of pre-set dimensions and the ability to select our own size.


Dashboard
Layout
Device Preview
Size
Desktop Browser (1000 x 800)
Fixed size
Desktop Browser (1000 x ...
Generic Desktop (1366 x 768)
Desktop Browser (1000 x 800)
Full Screen (1024 x 768)
Laptop Browser (800 x 600)
Web Page Embedded (800 x 800)
Blog Embedded (650 x 860)
Small Blog Embedded (420 x 650)
Column (550 x 1000)
PowerPoint (1600 x 900)
Story (1016 x 964)
Letter Portrait (850 x 1100)
Letter Landscape (1100 x 850)
Legal Landscape (1150 x 700)
A3 Portrait (1169 x 1654)
A3 Landscape (1654 x 1169)
A4 Portrait (827 x 1169)
A4 Landscape (1169 x 827)
Custom

“Range” makes it possible to set the dimensions for how large the dashboard can grow or shrink.

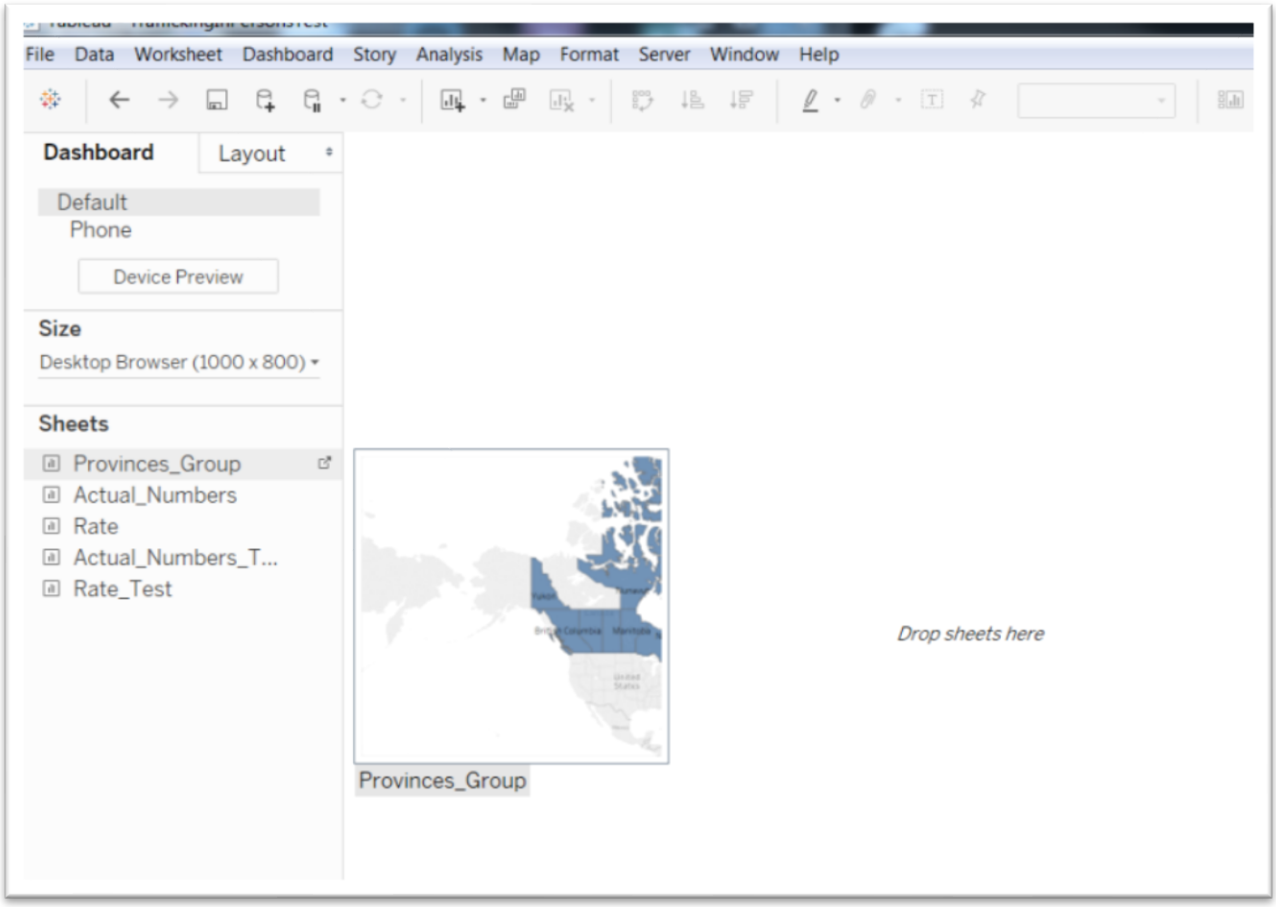
Automatic allows the dashboard to fill the available space.



You can also turn on the device preview by clicking on the tab at the top of the menu.

Adding views to the dashboard is as easy as clicking a table from the menu on the left and dragging onto the area to the right. Your legends will also appear unless you decided to hide them on the original sheet.

The first view will dominate the whole dashboard. In this case, let's drag the "Provinces_Group" table to the area to the right.


File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Dashboard
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Actual_Numbers
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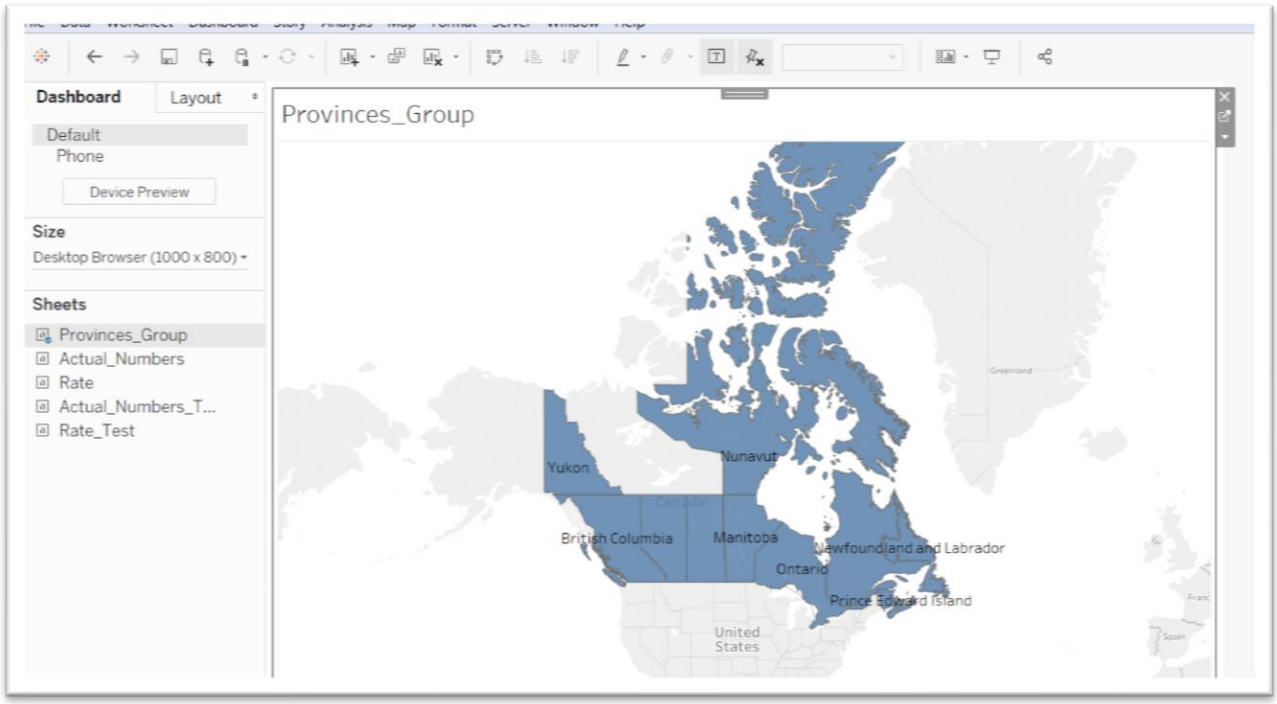
Rate_Test
Drop sheets here
Provinces_Group


Dashboard
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Actual_Numbers
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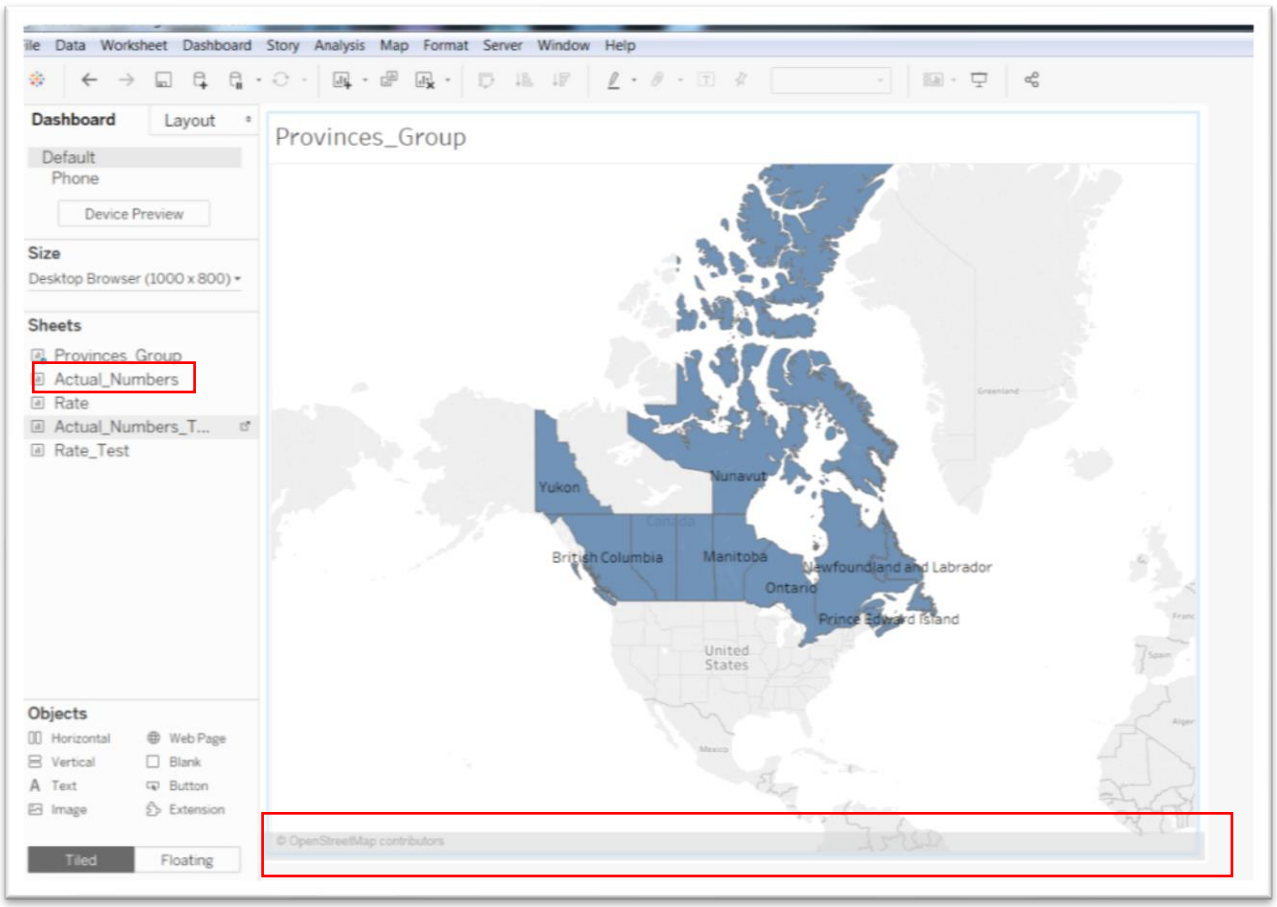
Rate_Test
Provinces_Group
Yukon
Nunavut
British Columbia
Manitoba
Newfoundland and Labrador
Ontario
Prince Edward Island
United States

You can place the tables containing the actual numbers and rates in specific areas, below the original table or to the left or right, by clicking on the desired table, holding down the mouse button and moving the mouse button around the dashboard, which shows grey areas indicating where the table will be placed when you let go.

Select “Actual_Numbers”, and drag it to the bottom of the map so that the grey, narrow band the fills the width.


File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Dashboard
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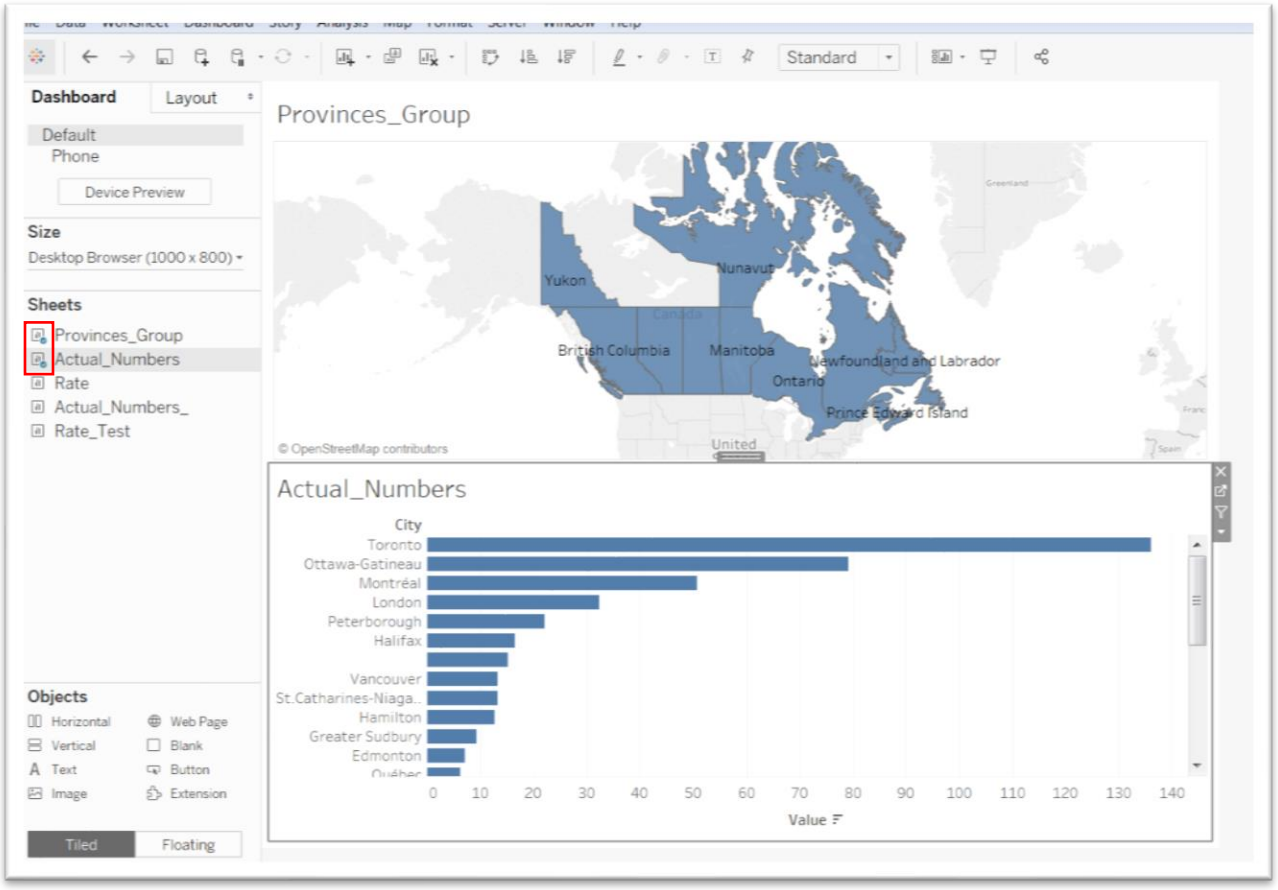
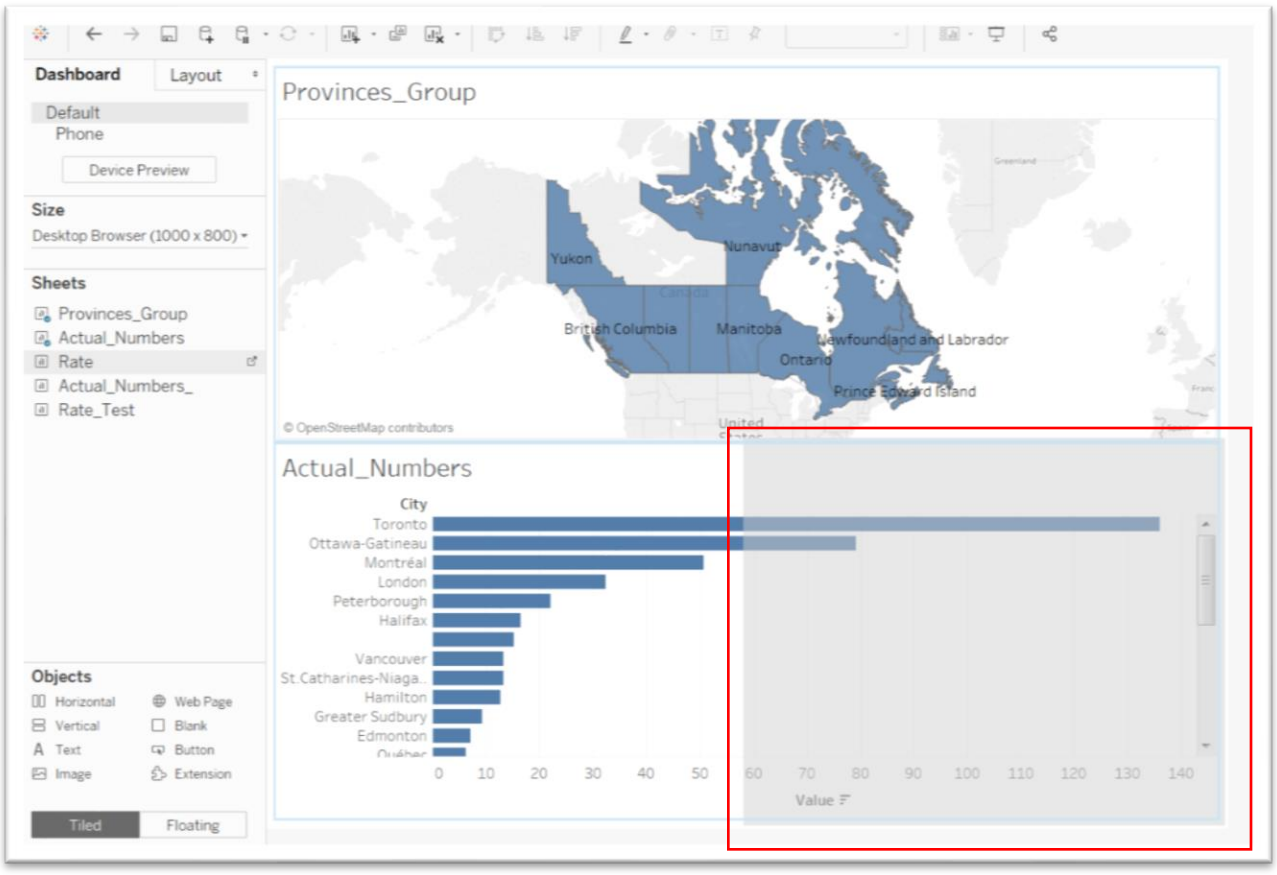
Floating
Provinces_Group
Yukon
Nunavut
British Columbia
Manitoba
Ontario
Newfoundland and Labrador
Prince Edward Island
United States
© OpenStreetMap contributors



Notice the checkmarks that have been added to the names of the sheets we added to the dashboard pane.

Using the same process we employed to add the first two sheets, we will complete the dashboard with the addition of “Rate.”


Dashboard
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Floating
Provinces_Group
Yukon
Nunavut
British Columbia
Manitoba
Newfoundland and Labrador
Ontario
Prince Edward Island
© OpenStreetMap contributors
Actual_Numbers
City
Toronto
Ottawa-Gatineau
Montréal
London
Peterborough
Halifax
Vancouver
St.Catharines-Niaga..
Hamilton
Greater Sudbury
Edmonton
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100
110
120
130
140
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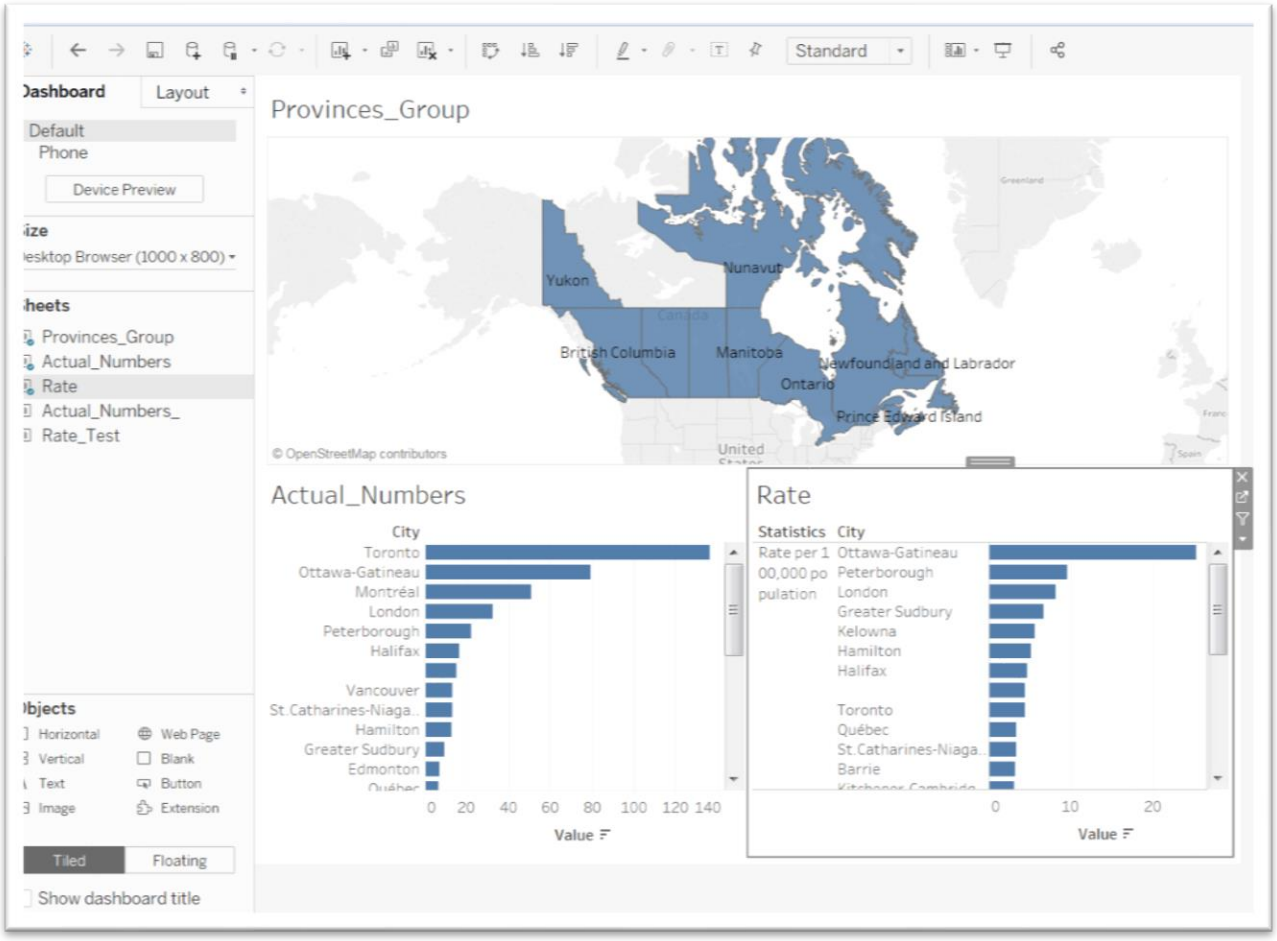
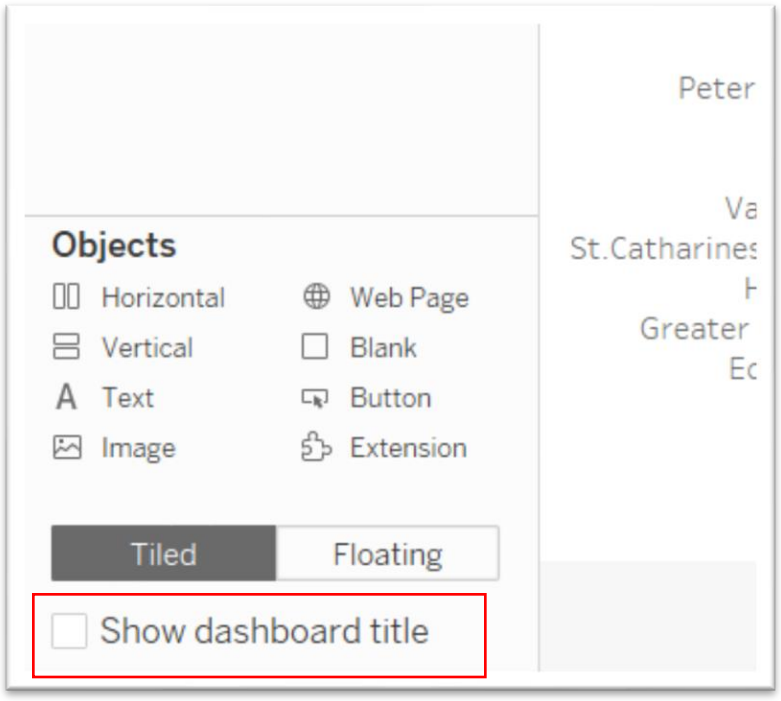
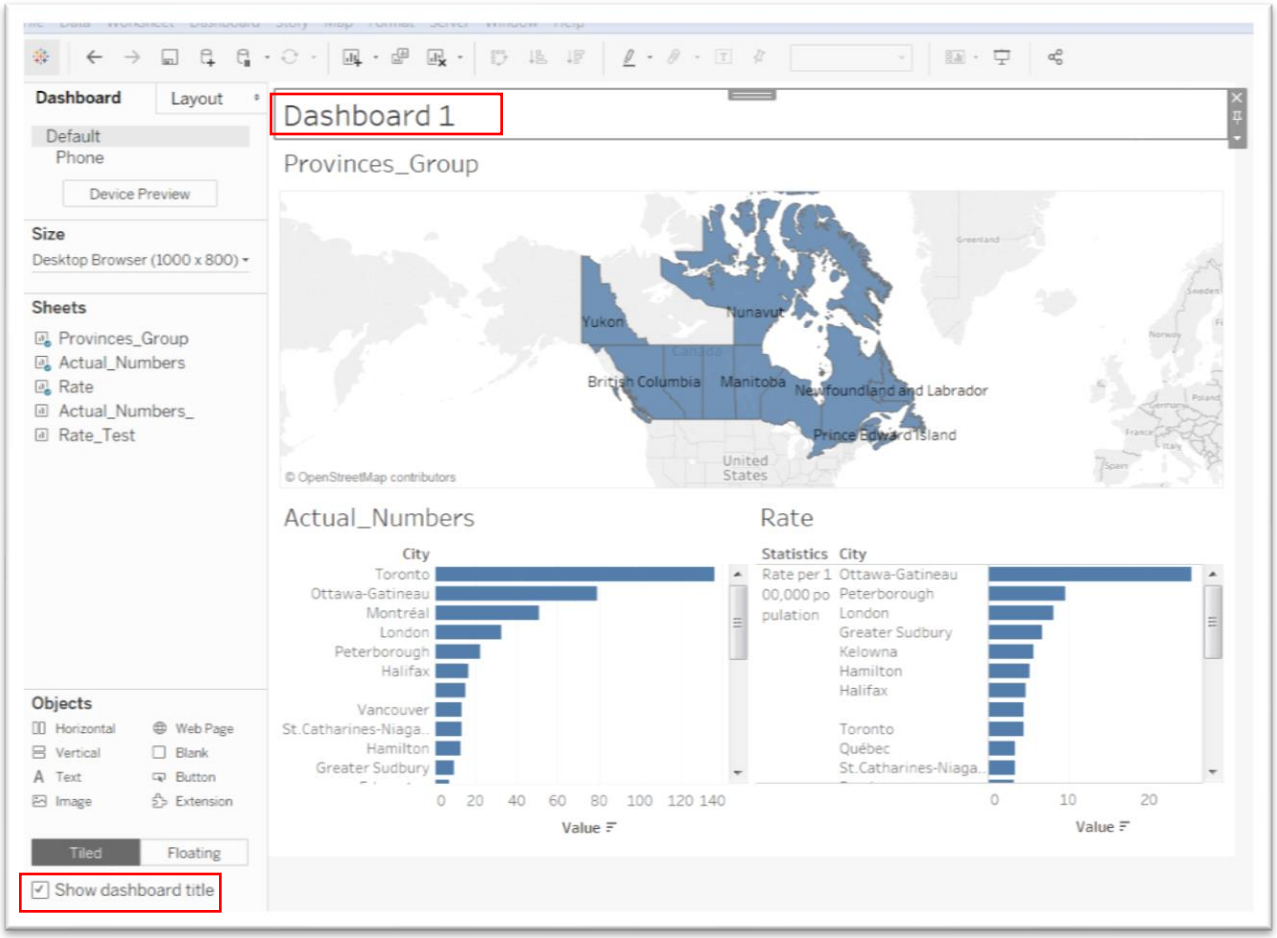


In the “Objects” area, there are options for layout containers and textboxes, which can also be dragged onto the dashboard. You can learn more information by visiting the Tableau website on dashboard objects.

Before making the dashboard interactive, let’s clean up what we have and give the entire visualization a title.

Click the box to the left of the “Show dashboard title.”




Dashboard
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Floating
Show dashboard title
Dashboard 1
Provinces_Group
Yukon
Nunavut
British Columbia
Manitoba
Newfoundland and Labrador
Prince Edward Island
United States
© OpenStreetMap contributors
Actual_Numbers
City
Toronto
Ottawa-Gatineau
Montréal
London
Peterborough
Halifax
Vancouver
St.Catharines-Niaga..
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Peterborough
London
Greater Sudbury
Kelowna
Hamilton
Halifax
Toronto
Québec
St.Catharines-Niaga..
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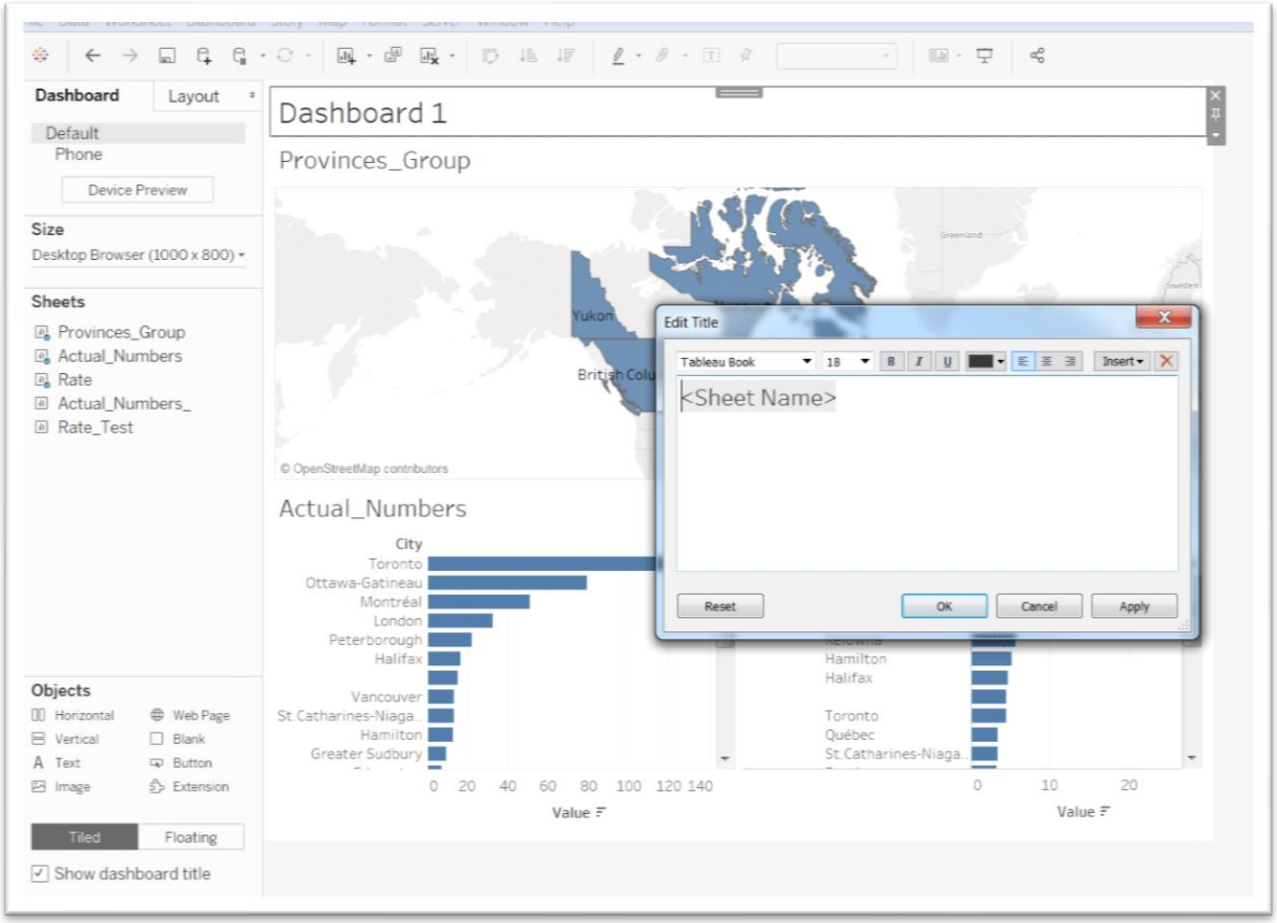
Value

Click on the “Dashboard 1” title to produce the text editor.



Click the title and give the dashboard a name, something like “Human Trafficking Offences in Canada – 2017”.

Highlighting the title makes it possible to change the font size and style (bold, italic, etc.), as well as the alignment, in this case the centre.

Once you're happy with the result, select the "Apply" and "OK" tabs to return to the dashboard.

To see what it looks like in the device that you choose for your display, click on the “Device Preview” tab on the left.

Not bad, but we have a few more steps to complete before we’re ready to share and publish.

Because the dashboard title is self-explanatory, we may not need the titles for each of the sheets, especially is you’ve done a good job of setting up the visualization with a tight, precise explanation.

Presuming we’ve done just that, let’s get rid of the titles, which unclutters the visualization, creating more room.

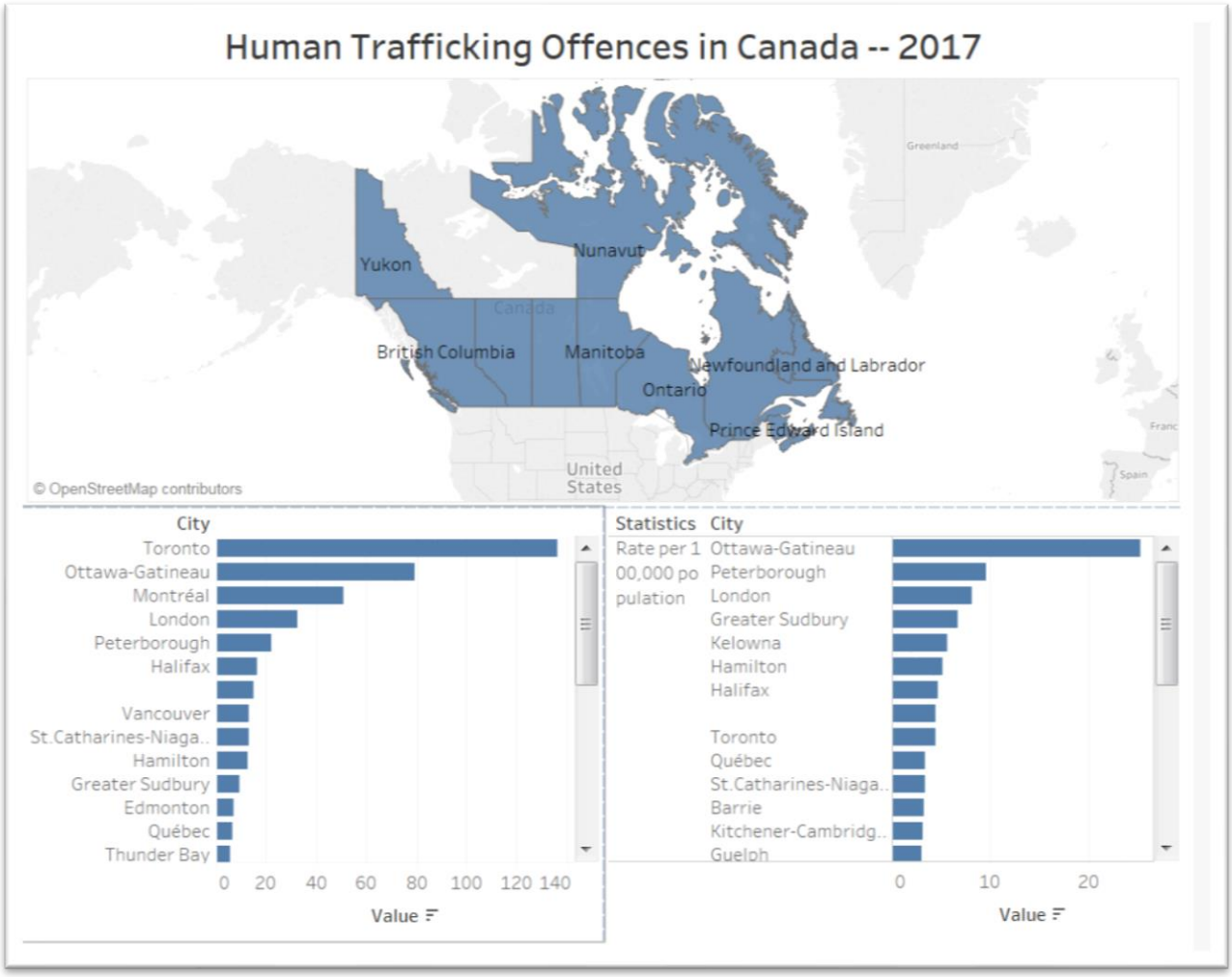
Let’s begin with the map.

Click anywhere inside the map to create a grey boundary.

Select the caret below the funnel icon to far right of the map, which produces a drop-down menu.

De-select the “Title.”

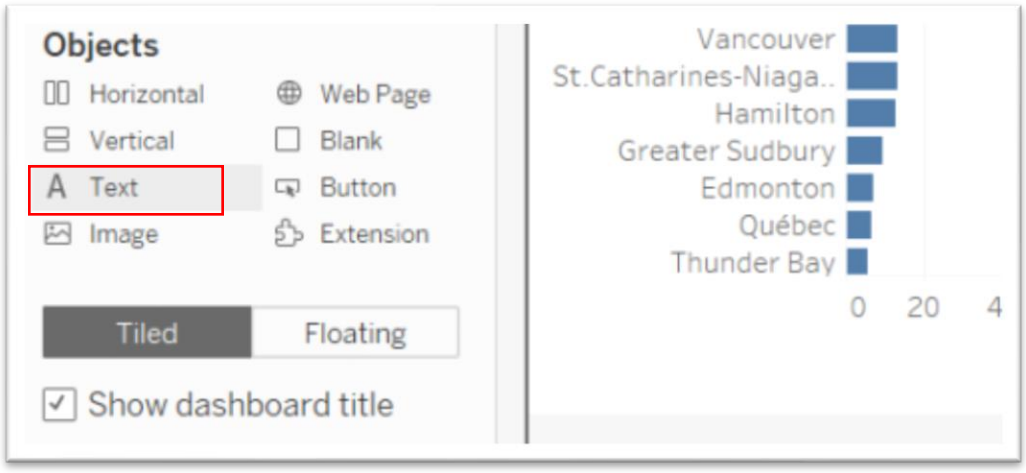
Now do the same for the other two worksheet titles.



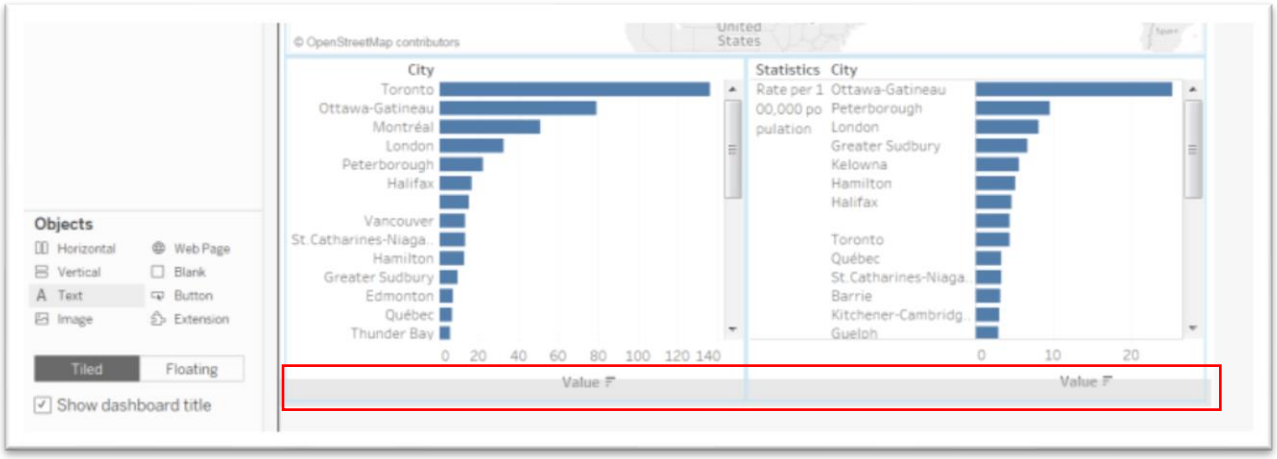
We’re almost there.

We must let people know who produced this wonderful visualization, along with the source of the material.

We can do this by selecting the “Text” option from “Objects”.

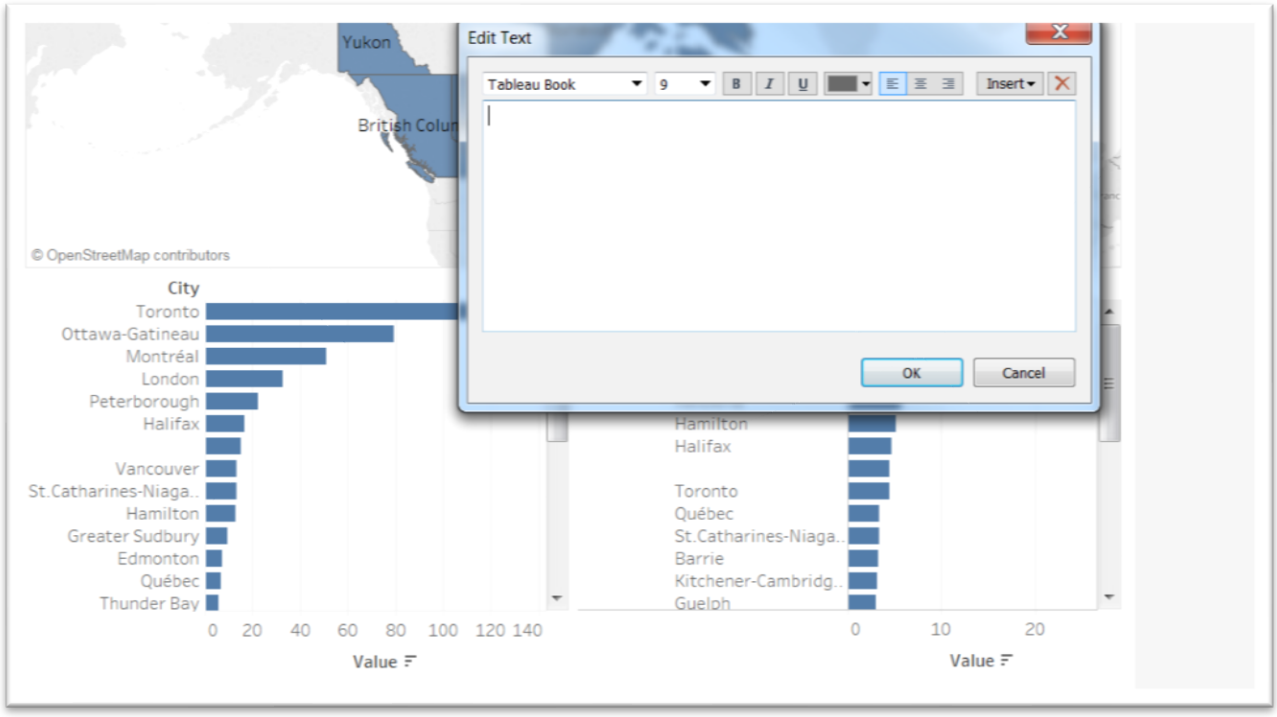


Drag the “Text” object onto the visualization and, just like we did for the worksheets, release it where you want it to be displayed.

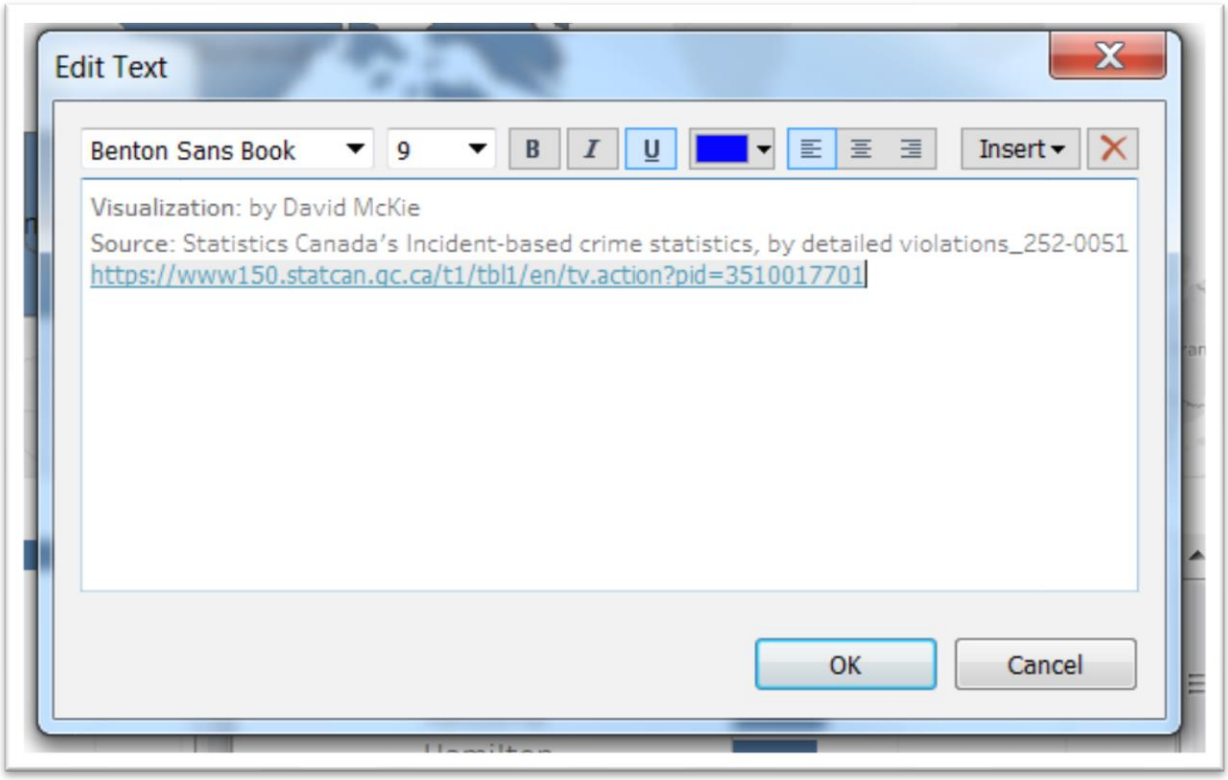


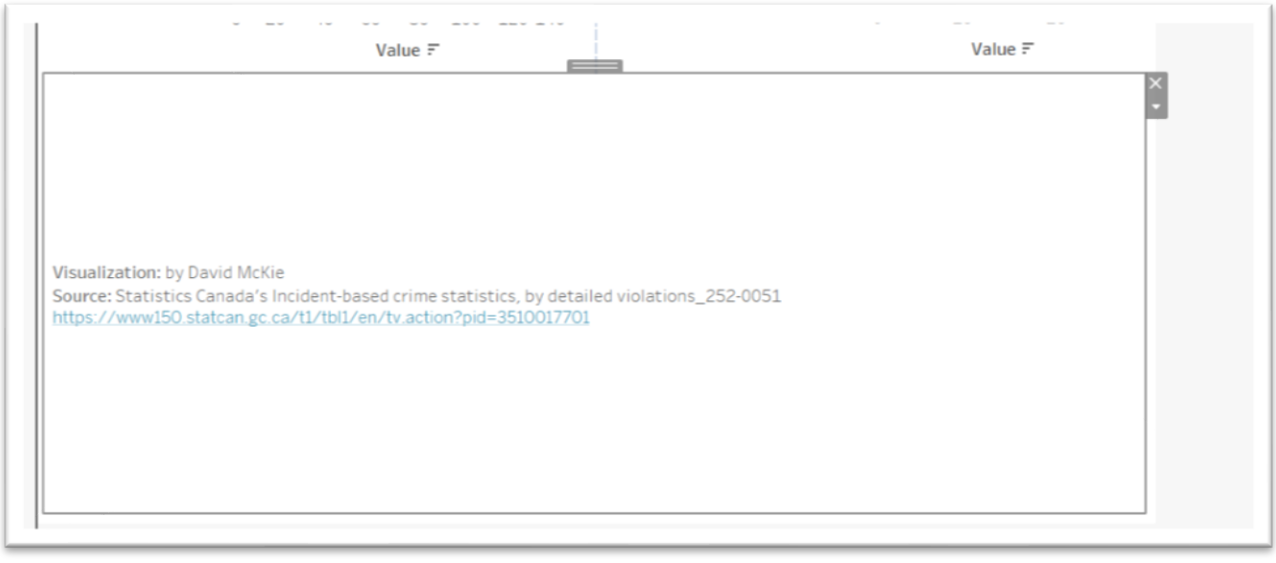
The grey area will indicate where it will appear. In this case, at the very bottom.

Releasing mouse produces a dialog box for the information and website URL we can to add.



You can type the name of the individual who created the visualization and the source of the material, including the URL.



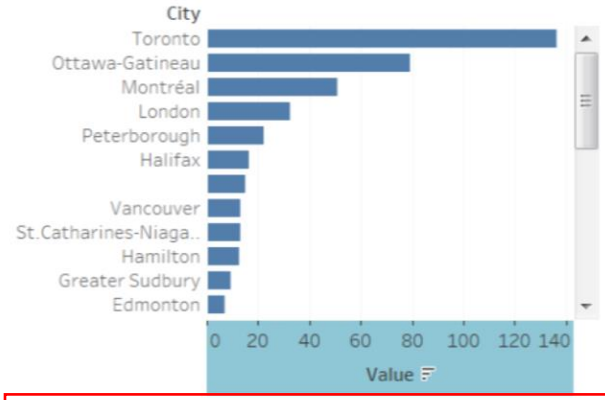


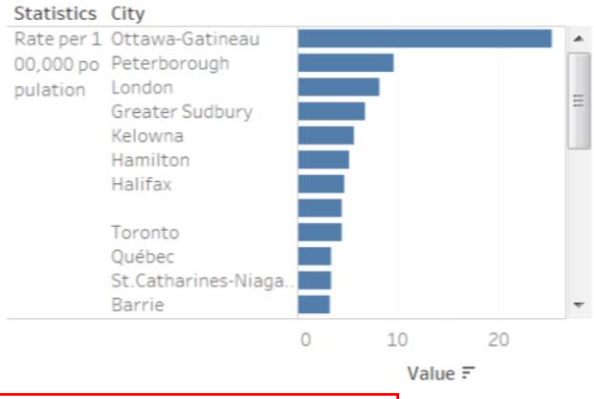
You can adjust the size by selecting the grey tab at the top and dragging it down to the desired location.

Visualization: by David McKie
Source: Statistics Canada's Incident-based crime statistics, by detailed violations_252-0051
https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3510017701

Visualization: by David McKie
Source: Statistics Canada's Incident-based crime statistics, by detailed violations_252-0051
https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3510017701

Human Trafficking Offences in Canada -- 2017





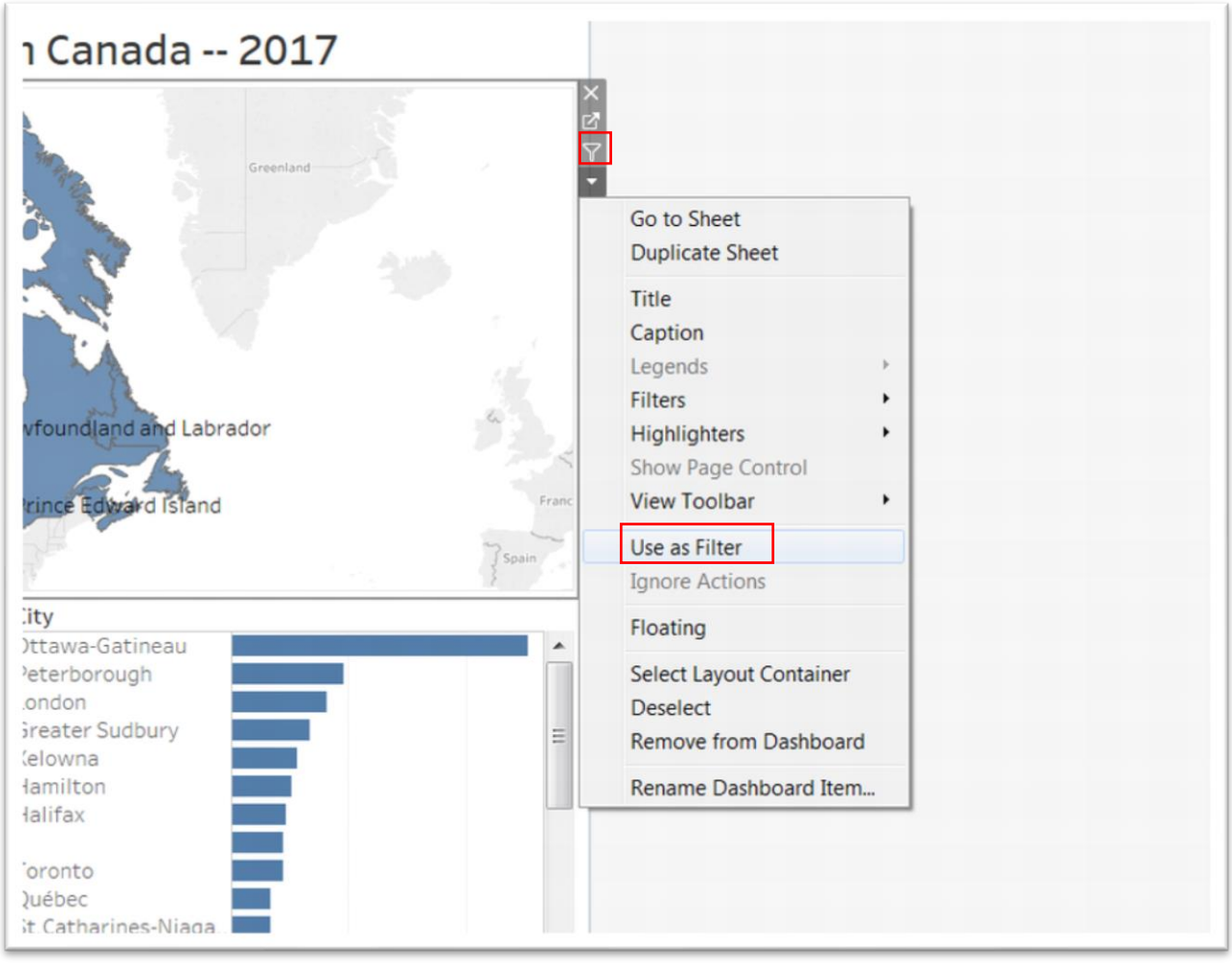
Visualization: by David McKie
Source: Statistics Canada's Incident-based crime statistics, by detailed violations_252-0051
https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3510017701

If you want to change the colours for the bars in the tables, you can do so by returning to the original worksheets, and using the “Colors” section in the Marks area to make another selection.

Now we want to activate the dashboard’s true power and advantage, it’s interactivity.

That is, clicking on a province in the map produces the corresponding number and rate for each city in that jurisdiction, allowing us to visually process a lot of information simultaneously.

You can perform this task one of two ways. Click inside the area containing the map to produce the grey boundary, then clicking the caret to produce the drop-down menu, and then the “Use as Filter” option.



Or simply select the little funnel icon above the menu caret.

Either option will allow your map to act as a filter for the entire dashboard. Now if you click on a province within the map, the other worksheets in the dashboard will update to show you only information related to the selected province.

Rename this Dashboard.

Task 5: Saving and embedding the visualization in your blog post

It's finally time to publish the visualization on the dashboard.

Go to "Server", "Tableau" and "Save Tableau As".

Publishing your dashboard means taking the file you created in Tableau Desktop or Tableau Public and sharing it via Tableau Server or Tableau Online.

Once we've renamed this dashboard tab, we can upload the dashboard visualization by going to "File" at the top left of the menu and selecting "Publish Workbook."

You may get a dialog box with an error message informing you that the "Tableau server you are publishing does not permit external database connections. Use the Data menu to create an extract for the following data sources."

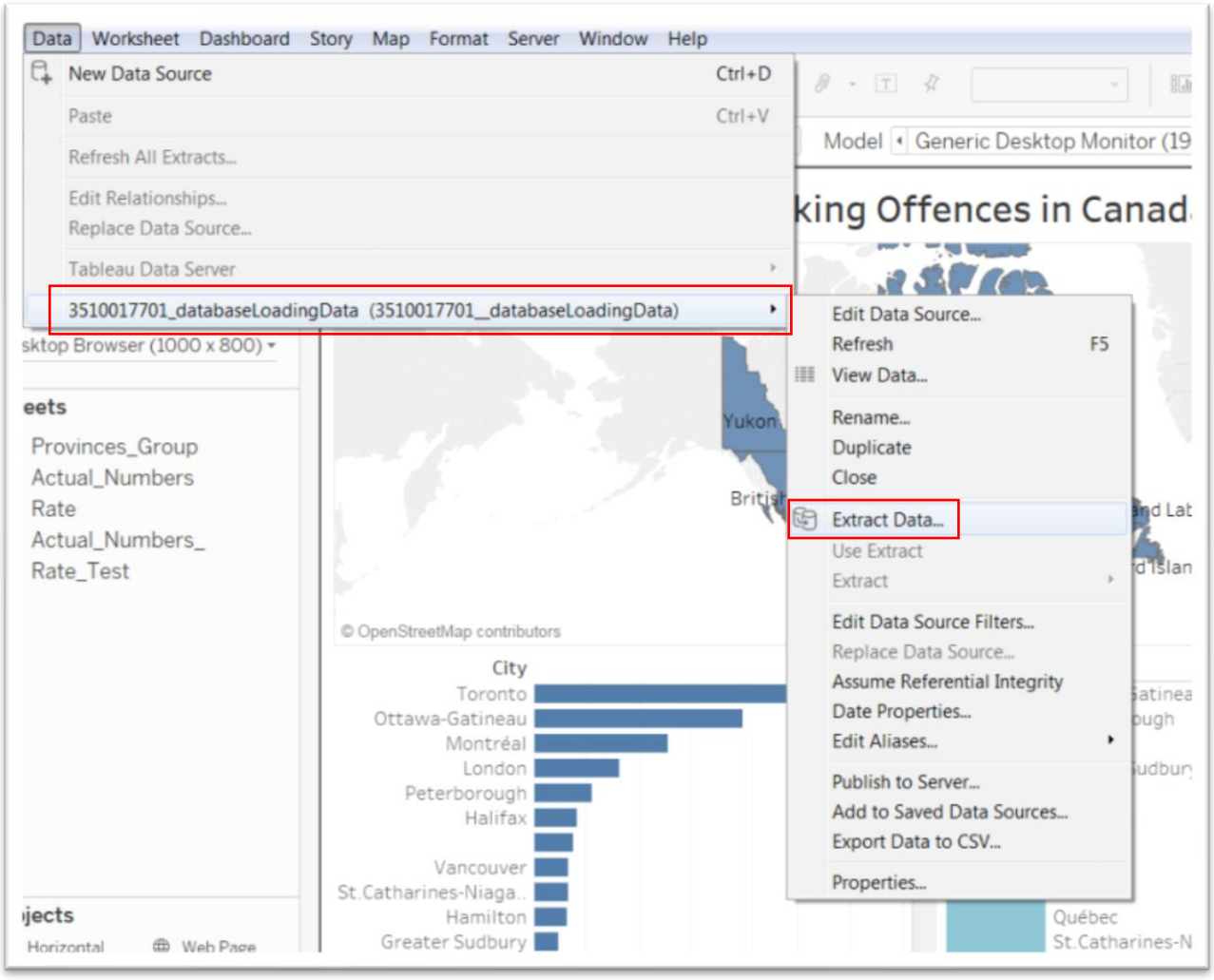
Click OK.

Now we will create that extract, which is a set of data that Tableau stores in its own format.

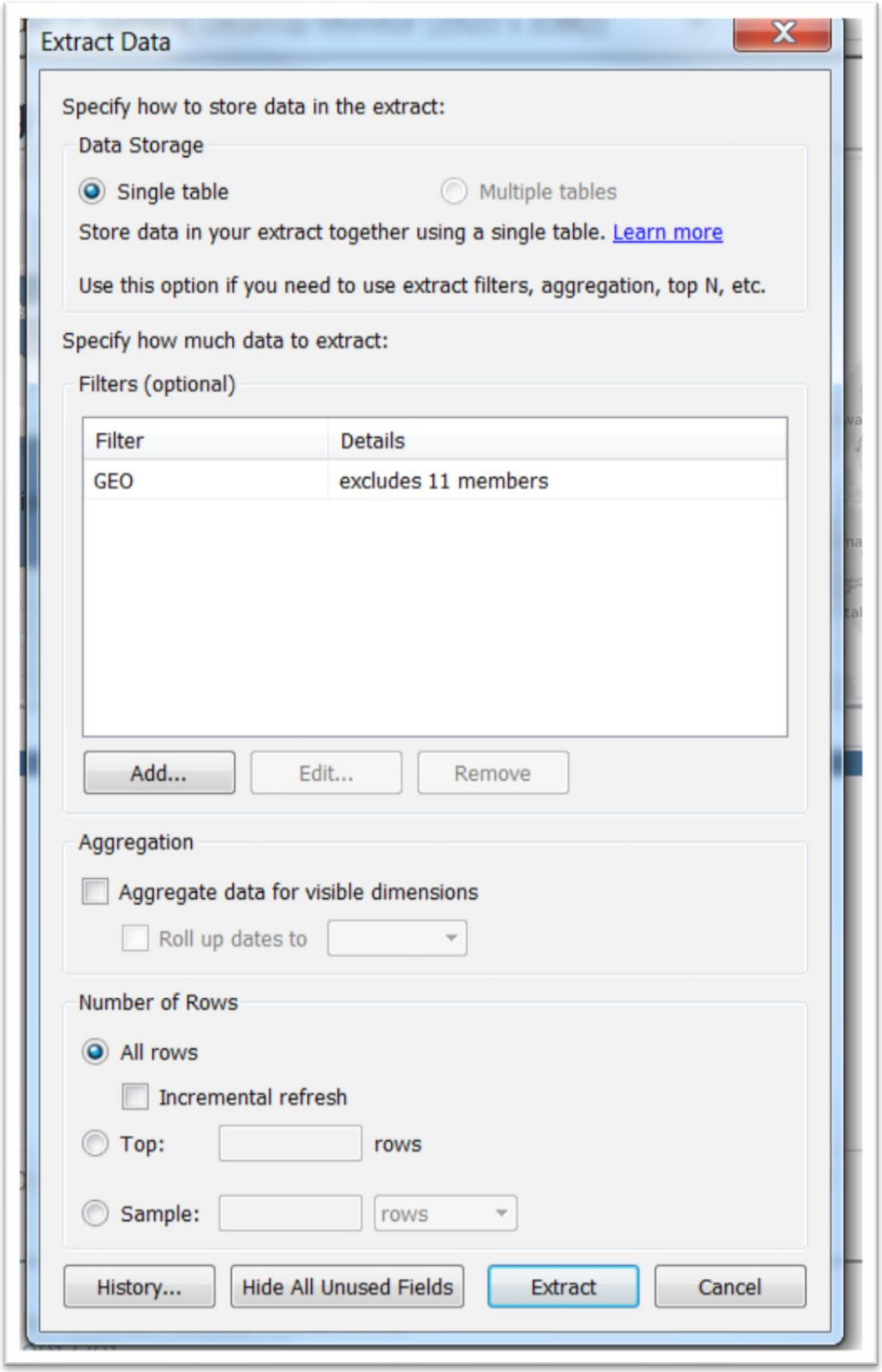
Tableau remembers the most recent connection and will keep you logged in. If not, you'll be prompted to log in. For online, you have a quick connect option.

Go to "Data" to produce the short cut menu.

Scroll down to the name of the Table, the same name that appears in the “Data Source” tab.



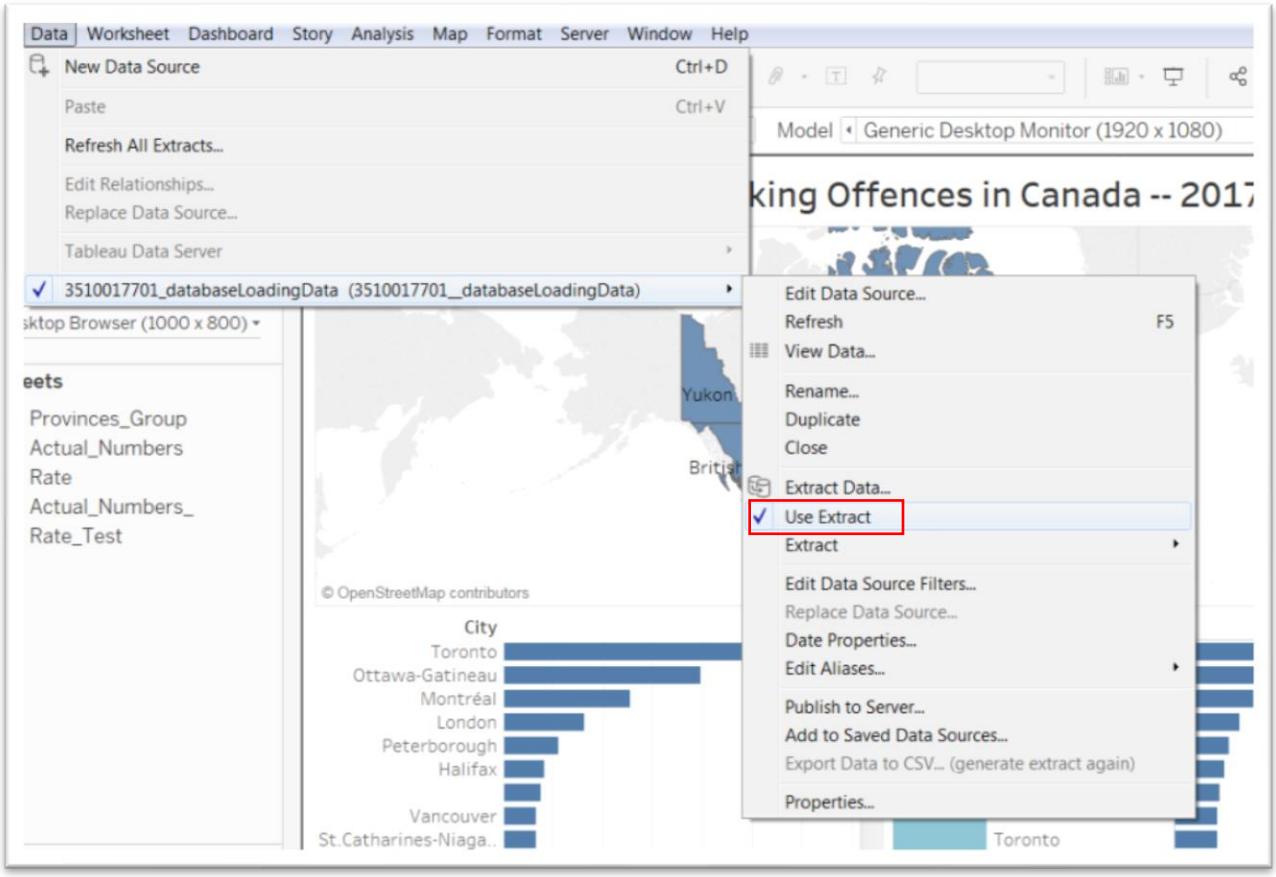
Select “Extract.”



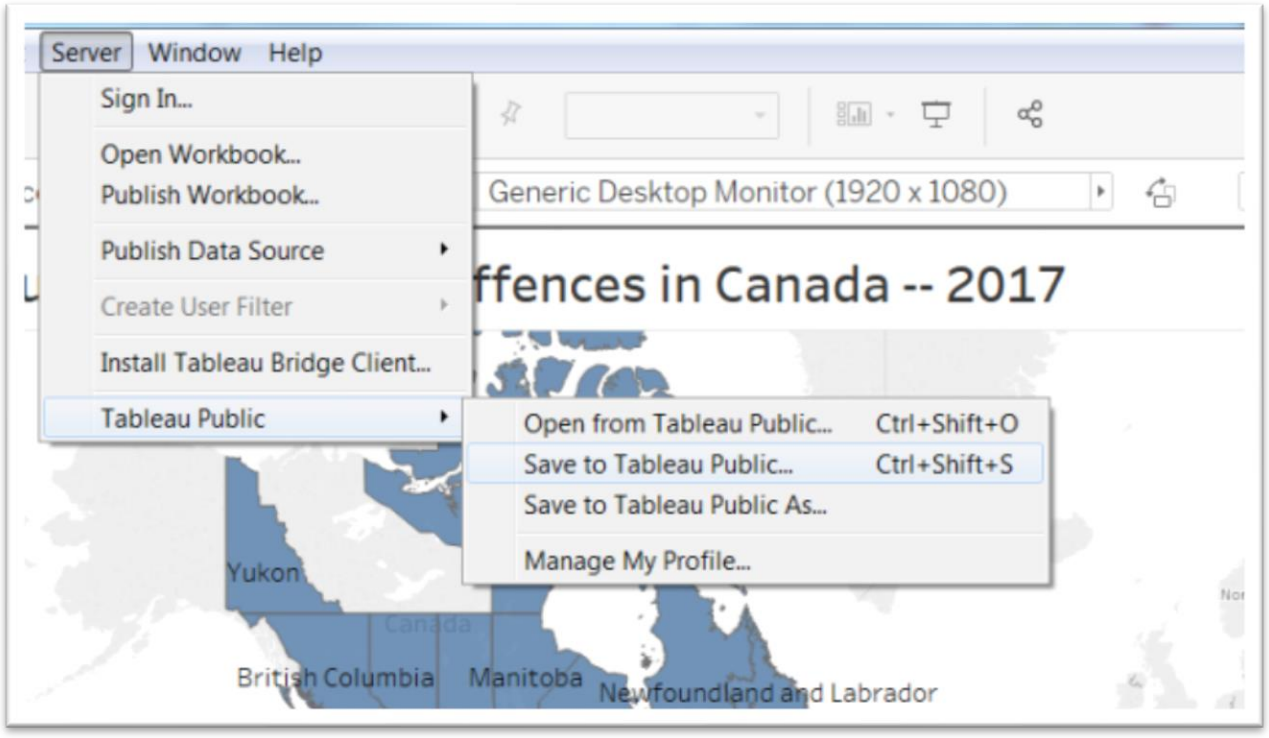
Just go with the default “All rows” selection and press the “Extract” tab.

Be sure to save the extract to the same folder on your hard drive that contains the Tableau document and Statistics Canada files.

Now if you return to “Data” in the menu, the “Use Extract” option is now checked.



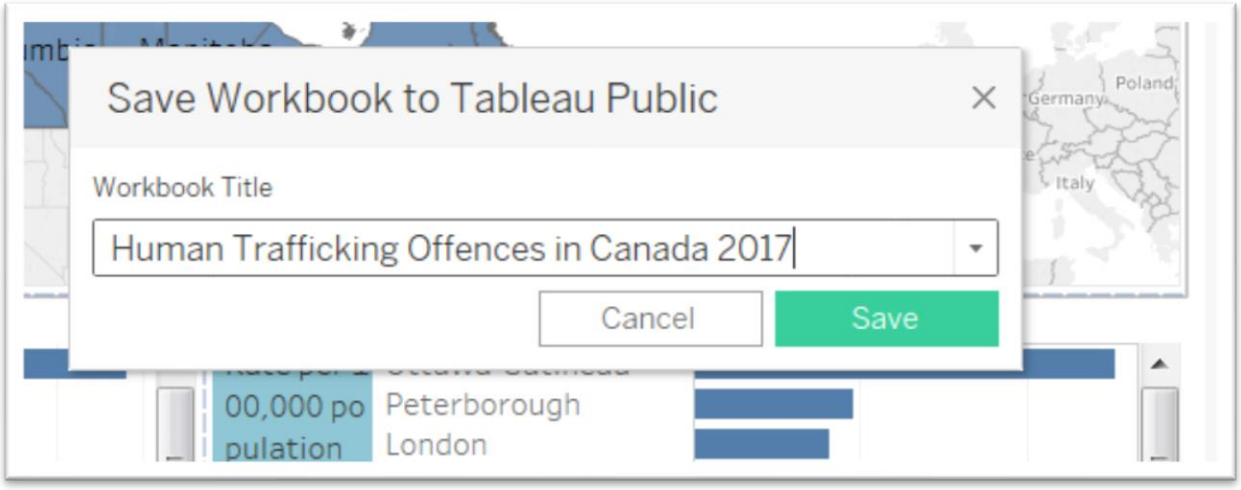
Now you can go to the “Server” on the menu and select the “Save to Tableau…” option.



You’ll obtain a “Tableau Public Sign In” dialogue box where you’ll have to enter your email address and the password that you used to create the account at the

beginning of this exercise. Signing in uploads your visualization to your browser.

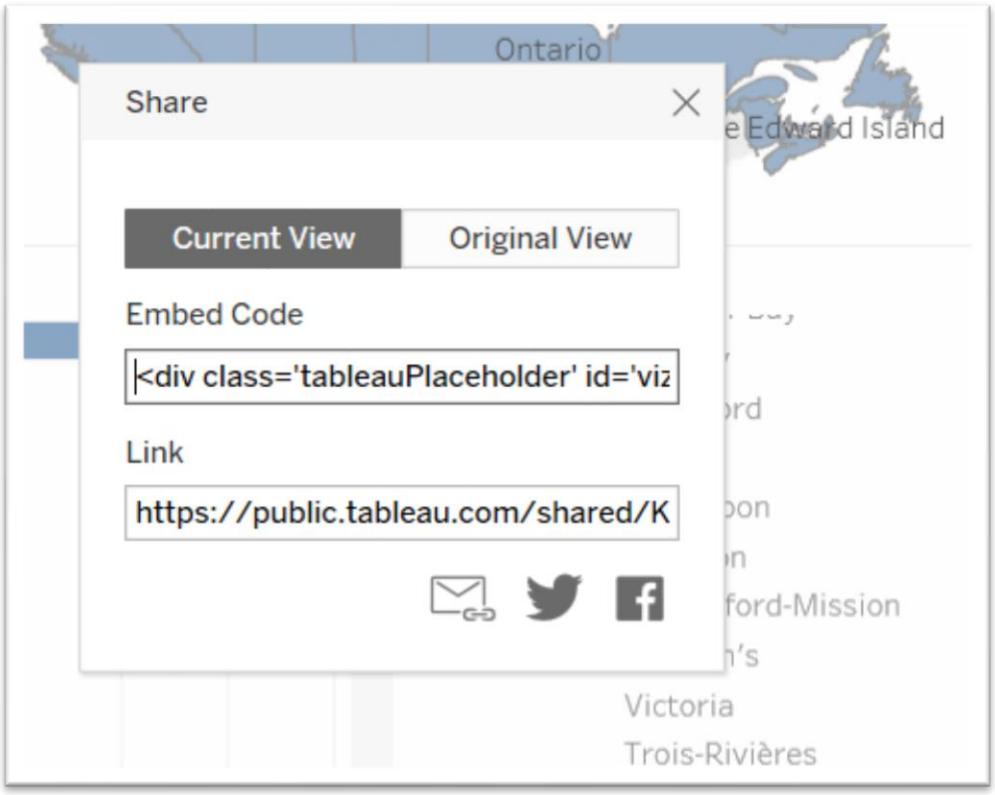
Be sure to plug in your Tableau Public log-in information.



Type the desired title and save.

tableau public
GALLERY
AUTHORS
BLOG
RESOURCES
ACTIVITY
Publish complete.
Edit details
Tweak the viz title, give it a brief description, call out those who inspired it, and/or add a link to where it will be embedded. You can even customize the toolbar!
Got it
Human Trafficking Offences in Canada -- 2017
Yukon
Nunavut
British Columbia
Saskatchewan
Ontario
Newfoundland and Labrador
Prince Edward Island
© 2019 Mapbox © OpenStreetMap
City
Toronto
Ottawa-Gatineau
Montréal
London
Peterborough
Halifax
Vancouver
St. Catharines-Niagara
Statistics
Rate per 100,000 population
City
Ottawa-Gatineau
Peterborough
London
Greater Sudbury
Kelowna
Hamilton
Halifax
Keep Only
Exclude

Scroll to the bottom.



Click the “Share” icon to obtain the URL and embed code that can be pasted into your blog post.

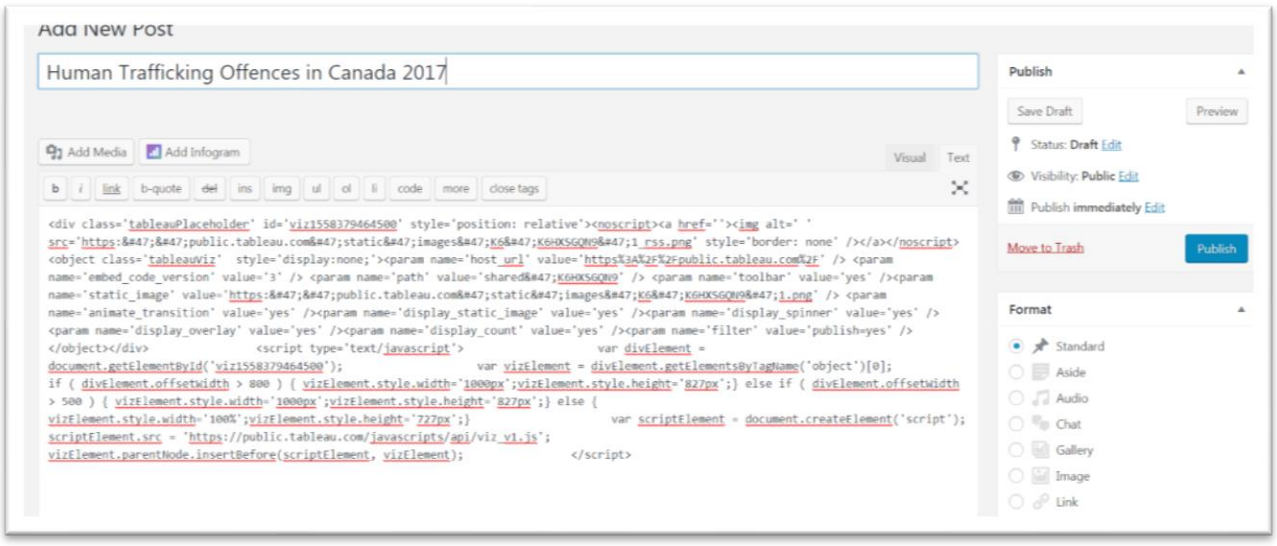


Tableau is an excellent choice for many visualizations, especially for uploading tables with geographic information such as countries or provinces. You can use the

map as a filter for tables that contain other important information that you want to convey.

Tableau Public's website contains many excellent starter tutorials that can help take your visualizations to an even higher level.