An Overview to Tableau Public Visualizations

Summary: Subject to regular updates, <u>Tableau Public</u> is a free, cloud-based version of the Tableau Desktop application widely used for enterprise visualization and analysis of data. Tableau has acquired by <u>Salesforce</u> 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 <u>website</u> with easy-to-follow, introductory <u>tutorials</u>.

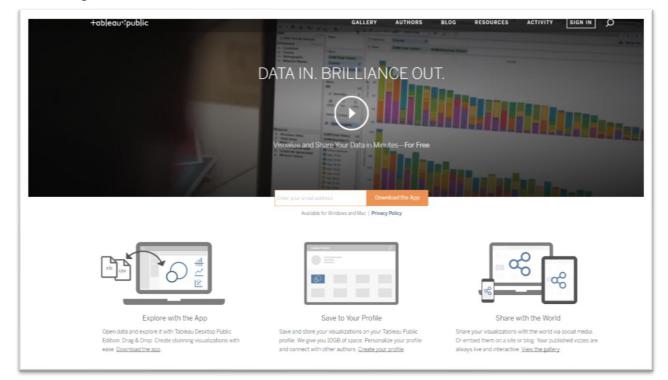
For this exercise, we will use Statistics Canada's annual crime data that breaks down offences for Canada, the provinces and major cities.

What you will learn:

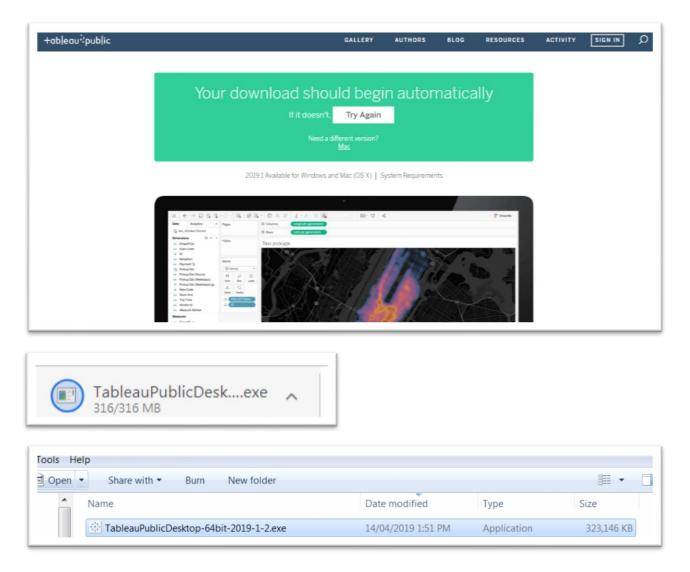
- 1. Uploading tables to Tableau Public and reformatting values
- 2. Creating worksheets and using simple <u>Tableau functions</u> to create new columns for geography, cities and provinces.
- 3. Creating maps and bar graphs.
- 4. Creating an interactive dashboard.
- 5. Saving and embedding the visualization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

Task 1: Uploading tables to Tableau Public and reformatting values

When you open the <u>website</u> 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 <u>here</u> 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 "<u>Incident-based crime</u>

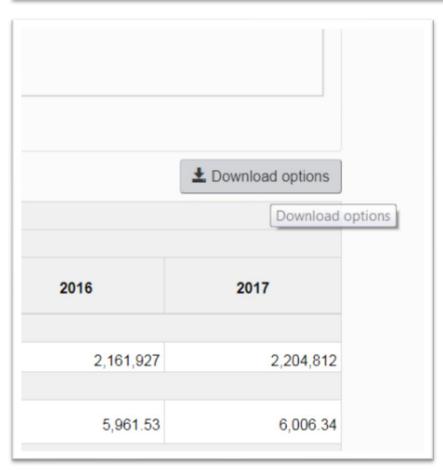
statistics, by detailed violations" dataset, a compilation of the dozens of violations (from murder, to assault, to fraud and break-and-enter) broken down nationally, by province and territory, as well as the largest cities in each of those jurisdictions. Specifically, the Excel table we have filtered 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.

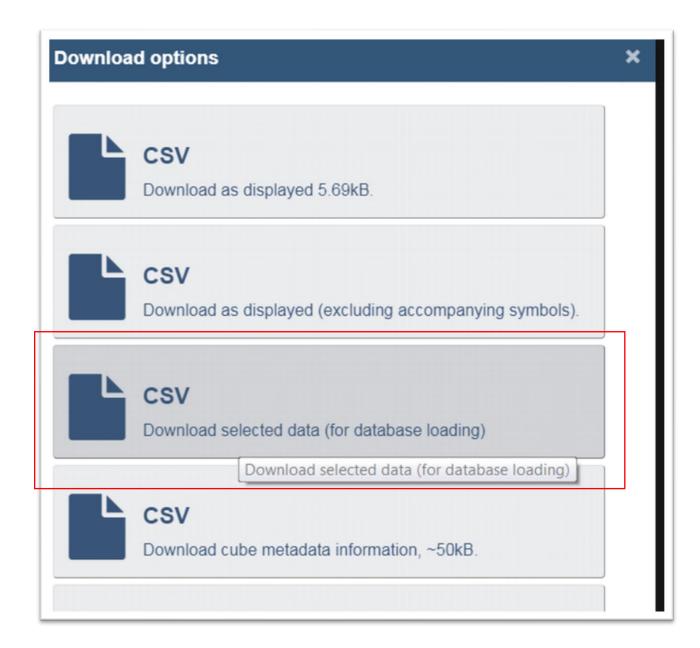
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Total, adult charged	
Rate, adult charged per 100,000 population aged 18 years and over	
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For an explanation of key terms such as "incident", read the <u>annotation</u> in Statistics Canada's UCR Manual that has been uploaded to <u>DocumentCloud</u>.

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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
REF_DATE	GEO	Violations	Statistics	UOM	VALUE
2011	L Canada	Total, all violations	Actual incidents	Number	227591
2012	2 Canada	Total, all violations	Actual incidents	Number	224445
2013	3 Canada	Total, all violations	Actual incidents	Number	209877
2014	Canada	Total, all violations	Actual incidents	Number	205292
2015	6 Canada	Total, all violations	Actual incidents	Number	211868
2016	5 Canada	Total, all violations	Actual incidents	Number	216192
2017	7 Canada	Total, all violations	Actual incidents	Number	220481
2011	L Canada	Total, all violations	Rate per 100,000 population	Rate	6627.0
2012	2 Canada	Total, all violations	Rate per 100,000 population	Rate	6458.7
2013	Canada	Total, all violations	Rate per 100,000 population	Rate	5970.5
2014	Canada	Total, all violations	Rate per 100,000 population	Rate	5777.1
2015	6 Canada	Total, all violations	Rate per 100,000 population	Rate	5912.7
2016	5 Canada	Total, all violations	Rate per 100,000 population	Rate	5961.5
2017	7 Canada	Total, all violations	Rate per 100,000 population	Rate	6006.3
2011	L Canada	Total, all violations	Total cleared	Number	106642
2013	2 Canada	Total, all violations	Total cleared	Number	105070
2013	Canada	Total, all violations	Total cleared	Number	99193
2014	Canada	Total, all violations	Total cleared	Number	95251
2015	o Canada	Total, all violations	Total cleared	Number	95154
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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 <u>incidents</u>"; "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.

Tableau Public - Book1	
File Data Help	
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Connect	
To a file	
Excel Text File	
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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:

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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.

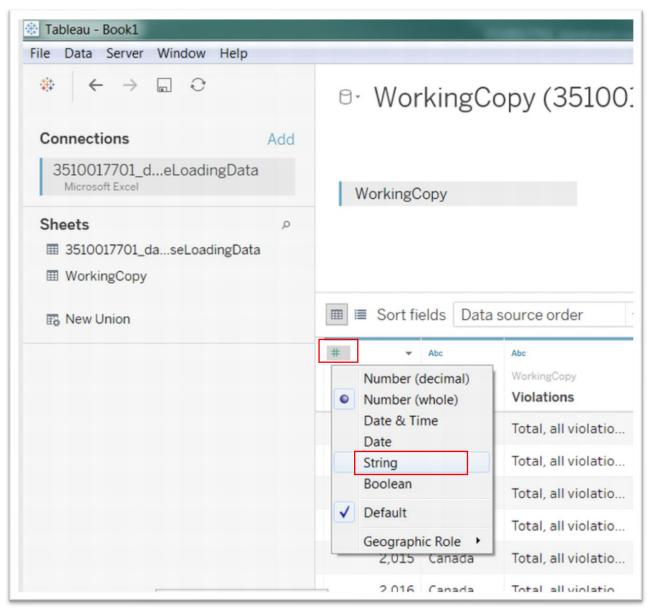
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	2,014	Canada	Trafficking in per	Actual incidents	Number	143.000	
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Renaming the column titles is as easy as clicking on them and typing a new name. In this case, the titles are self-explanatory.

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".

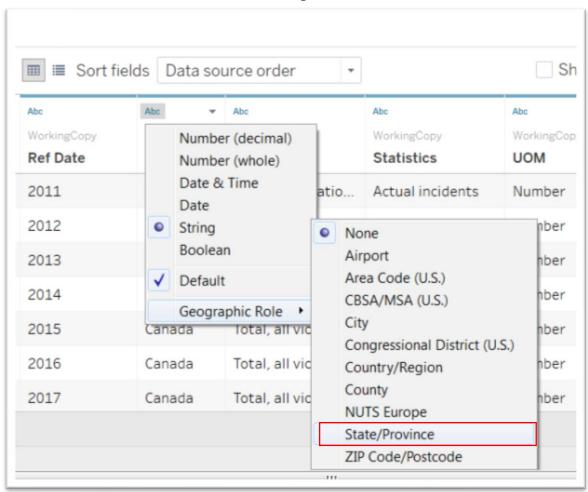
Click the hashtag symbol.



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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 <u>click</u> 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.

Abc	•
WorkingCopy	WorkingCopy
Ref Date	GEO
2011	St. John's, Newfoundland and Labrador [10001]
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2013	St. John's, Newfoundland and Labrador [10001]
2014	St. John's, Newfoundland and Labrador [10001]
2015	St. John's, Newfoundland and Labrador [10001]
2016	St. John's, Newfoundland and Labrador [10001]
2017	St. John's, Newfoundland and Labrador [10001]
2011	Prince Edward Island [11]
2012	Prince Edward Island [11]
2013	Prince Edward Island [11]
2014	Prince Edward Island [11]

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.

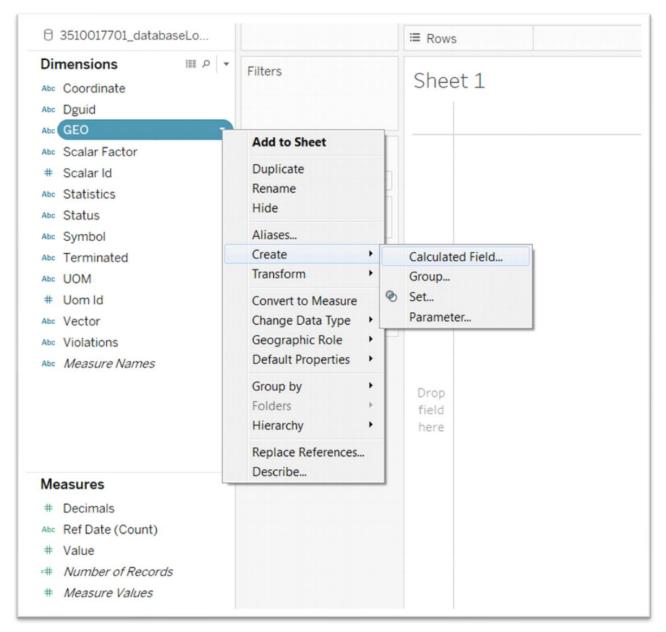
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Go to "Sheet 1."

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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."

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Let's give the new field a title: "Geography."

[GEO]	
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The calculation is valid.	Apply OK

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

Geography	×
TRIM(SPLIT([GEO], "	[", 1))
The calculation is valid.	10 Dependencies - Apply OK

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.

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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.

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		Regina	Abc
		Saguenay	Abc
		Saint John	Abc
Measures		Saskatoon	Abc
# Decimals		Sherbrooke	Abc
Abc Ref Date (Count)		St. John's	Abc
		St.Catharines-Niagara	Abc
# Value		Thunder Bay Toronto	Abc
# Number of Records		Trois-Rivières	Abc
# Measure Values		Vancouver	Abc
		Victoria	Abc
		Windsor	Abc

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.

Province		×
<pre>IF [City]='' then [Geography] ELSE TRIM(SPLIT([Geography], ',',2)) END</pre>		Þ
The calculation is valid.	Apply	ОК

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".

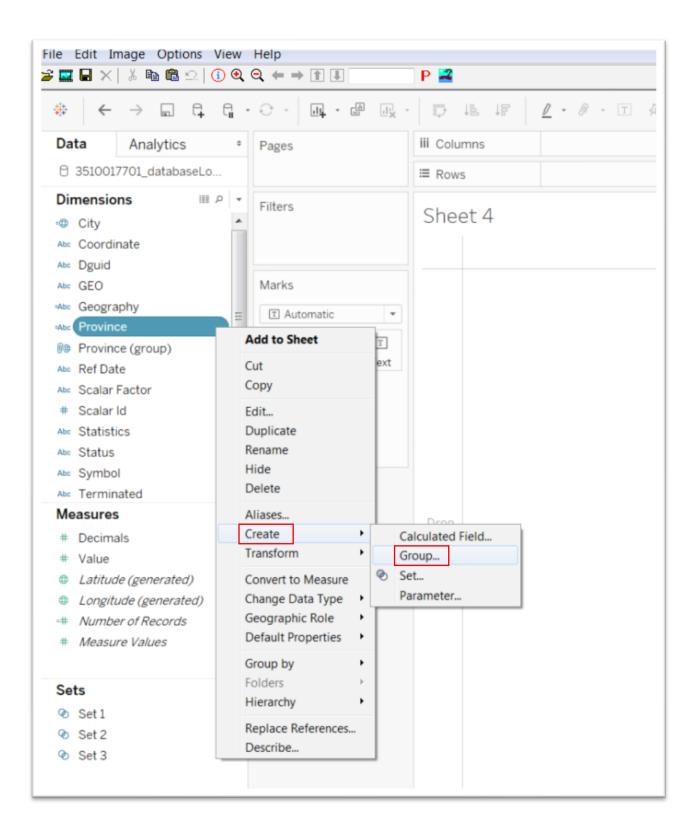
Data Analytics	Pages			iii Columns				
🗟 3510017701_databaseLo				E Rows Province				
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0				British Columbia	Abc			
Abc GEO	Marks			Canada	Abc			
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Abc Statistics	000	\Box		Nunavut	Abc			
Abc Status	Detail	Tooltip		Ontario	Abc			
Abc Symbol				Ontario part	Abc			
				Ontario/Quebec	Abc			
Abc Terminated				Prince Edward Island	Abc Abc			
Abc UOM				Quebec Quebec part	Abc			
# Uom Id				Saskatchewan	Abc			
Abc Vector				Yukon	Abc			
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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."



Field Name: Province (grou	up) 1	
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	OK	Cancel Apply

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

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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".

Field Name:	Province (group) 1					d her
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	dland and Labrador					
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reate Group [Province]		
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Groups: Add to: Alberta British Columbia Manitoba New Brunswick Newfoundland and Labrador Nova Scotia Nunavut Ø Ontario Ontario Ontario Ontario Ontario part Prince Edward Island Ø Quebec & Quebec part Quebec Quebec part Saskatchewan Yukon	Groups: Add to: Alberta British Columbia Manitoba New Brunswick Newfoundland and Labrador Nova Scotia Nunavut	Field Name:	Province (group) 1	d h
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Repeat the same process for "Quebec" and "Quebec part."

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

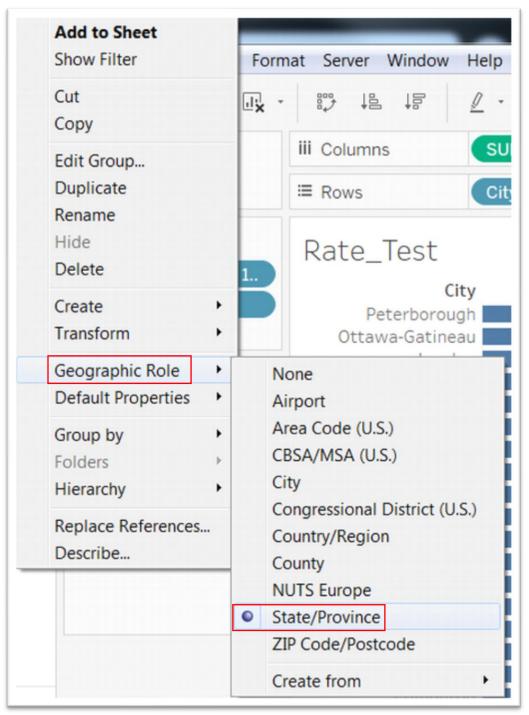
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Drag the new column into "Rows" to see the result.

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".



ata Analytics +	Pages	iii Columns
3510017701_databaseLo		E Rows Province (group)
City ▲ Coordinate	Filters	Sheet 4 Province (group)
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GEO	Marks	British Columbia Abc
		Manitoba Abc
◦ Geography Ξ	T Automatic -	New Brunswick Abc
Province		Newfoundland and Labrador Abc
Province (group)	5 D I	Nova Scotia Abc Nunavut Abc
Ref Date	Color Size Text	Nunavut Abc Ontario Abc
Scalar Factor		Prince Edward Island Abc
		Quebec Abc
Scalar Id	Detail Tooltip	Saskatchewan Abc
Statistics		Yukon Abc
• Status		100
Symbol		

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.

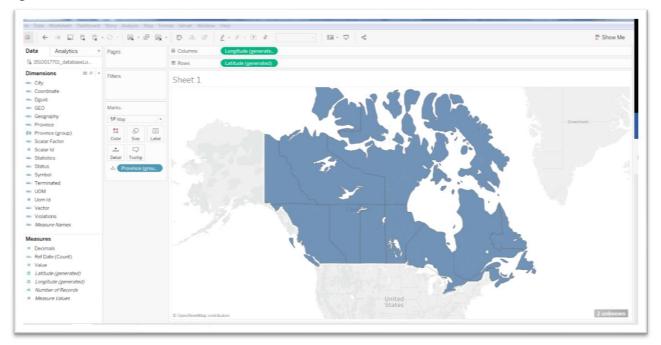
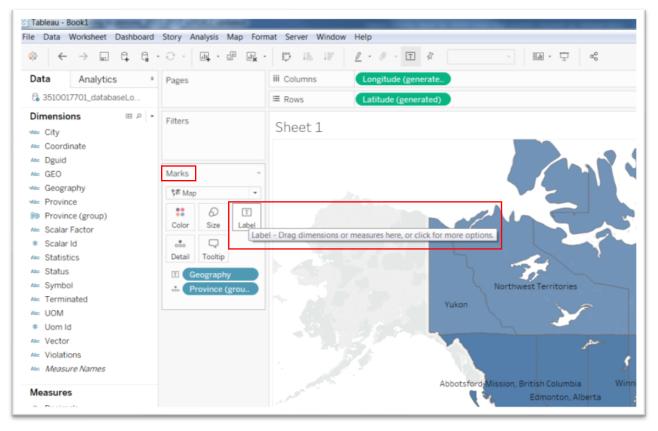
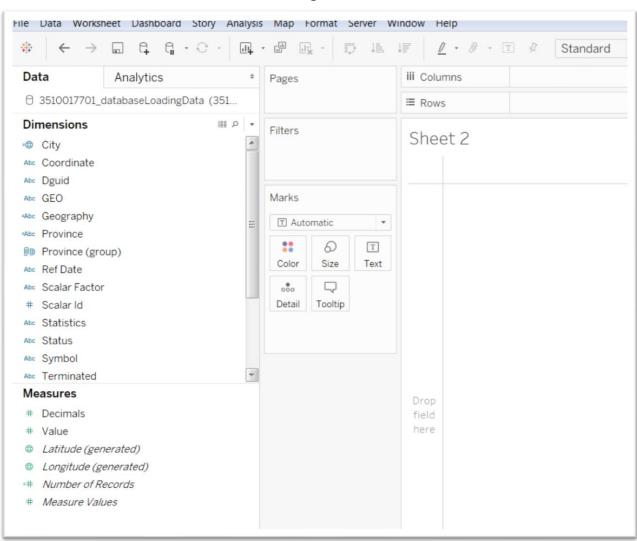


Tableau has automatically assigned the longitude and latitude coordinates in the columns and rows, respectively.

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.

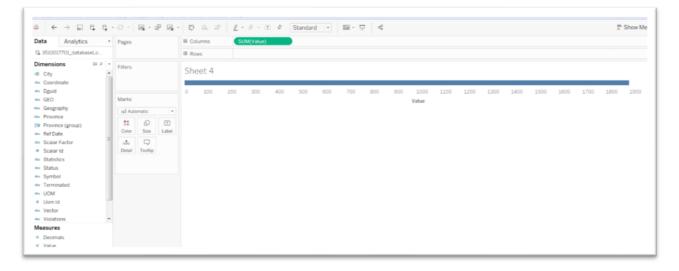
As we saw on the previous worksheet, the right side is a canvas, which will contain your visualizations.

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.

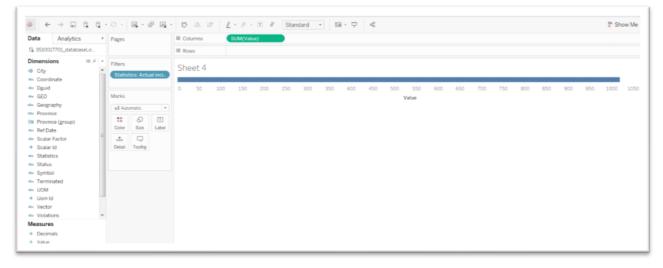


To make sense of the aggregate number, it must be filtered to reflect the one we want for this worksheet. In this case, we're interested in the "actual" number.

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

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 Number of Records Measure Values 			Reset OK Cancel Apply	

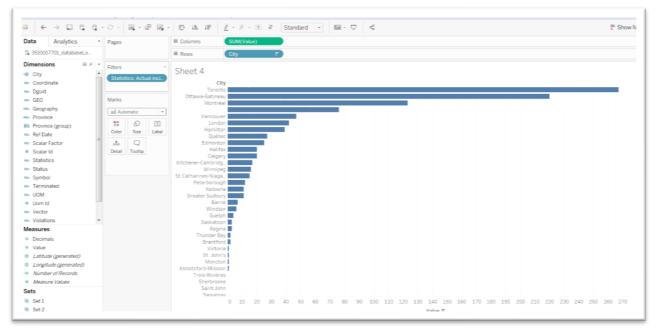
Select "Actual Incidents", and then the "Apply" and "OK" tabs.



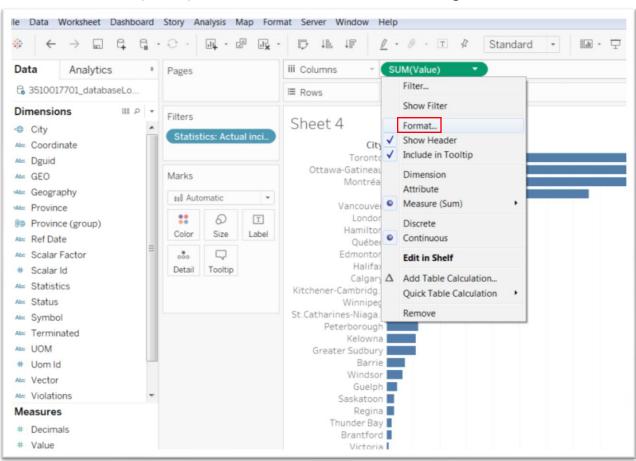
Once filtered, the total numbers are noticeably smaller.

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.

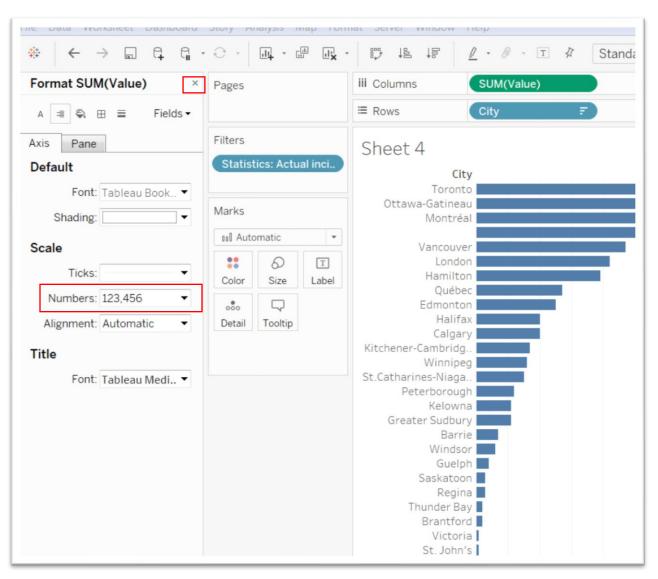


No surprise here. Toronto is Canada's largest city. So, it makes sense that it would have the largest number. The numbers may need a bit of formatting to remove the decimal place.



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

Select the "Format" option, which produces menu to the left.

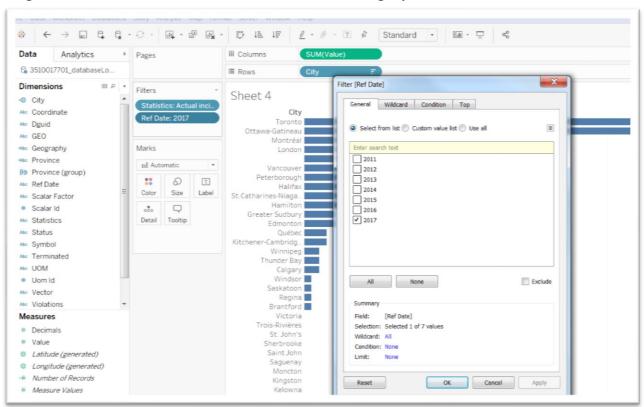


Select the caret to the right of the "Numbers" option, and then "Number (Standard)" to lose the decimal places. (Note: You can also choose the "Custom" option to manually remove the decimal places. The choice is yours)

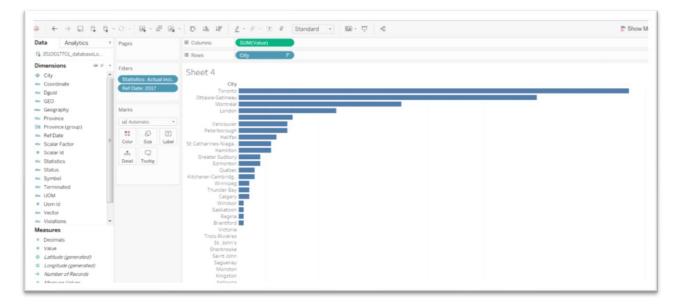
Once you've made the selections, close the menu by clicking on the "X" at the top right corner.

Pages			III Columns SUM(Value)	
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	ි Size	1 Label	London Hamilton	
	□. Tooltip		Québec Edmonton Halifax Calgary	
			Kitchener-Cambridg. Winnipeg St. Catharines-Niaga.	

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.)



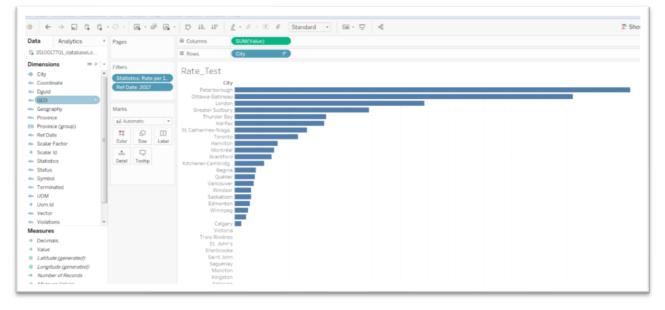
Drag the Year column from the "Dimensions" category into the filter.



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.



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Thunder Bay	Value: 7.16
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Montréal	
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Regina Québec	
Vancouver	
Windsor	=
Saskatoon	
Edmonton	
Winniped	

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.

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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.

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

Das	hboard	Layout	٥	
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1	Full Screen (1024 x 768)		
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"Range" makes it possible to set the dimensions for how large the dashboard can grow or shrink.

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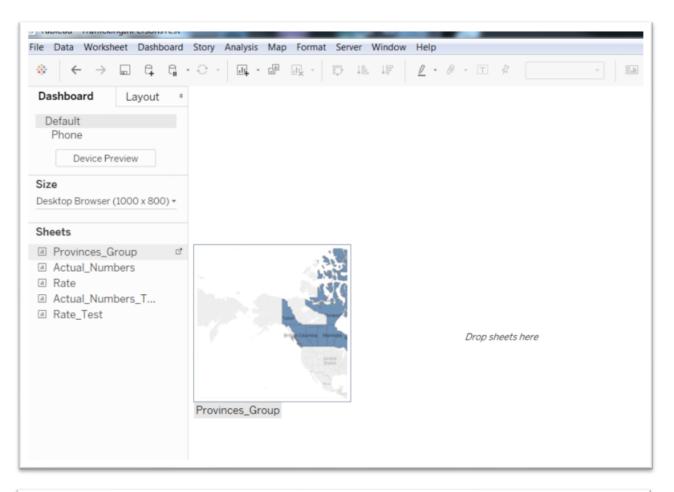
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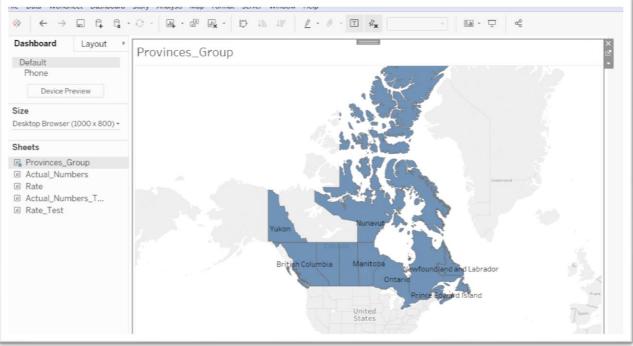
Automatic allows the dashboard to fill the available space.

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.

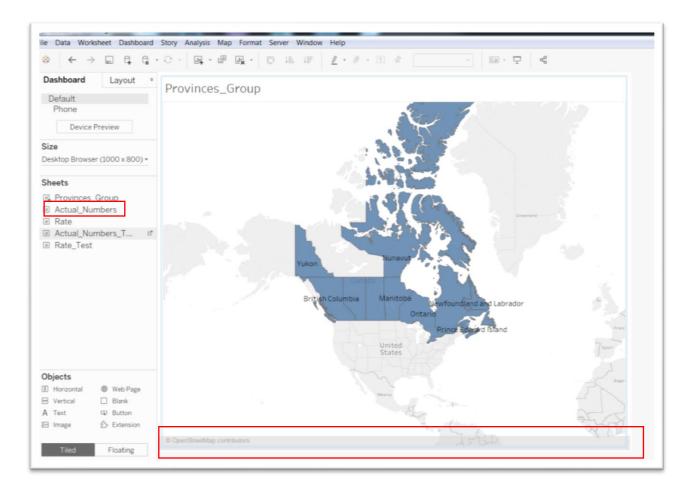
The first view will dominate the whole dashboard. In this case, let's drag the "Provinces_Group" table to the area to the right.

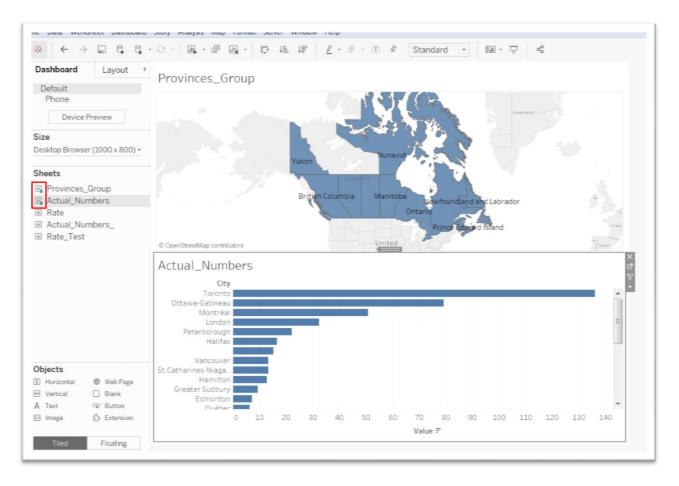




You can place the tables containing the actual numbers and rates in specific areas, below the original table or to the left or right, by clicking on the desired table, holding down the mouse button and moving the mouse button around the dashboard, which shows grey areas indicating where the table will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

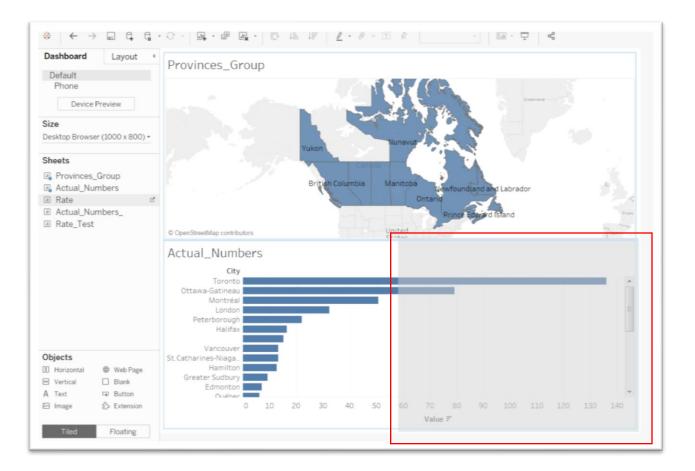
Select "Actual_Numbers", and drag it to the bottom of the map so that the grey, narrow band the fills the width.

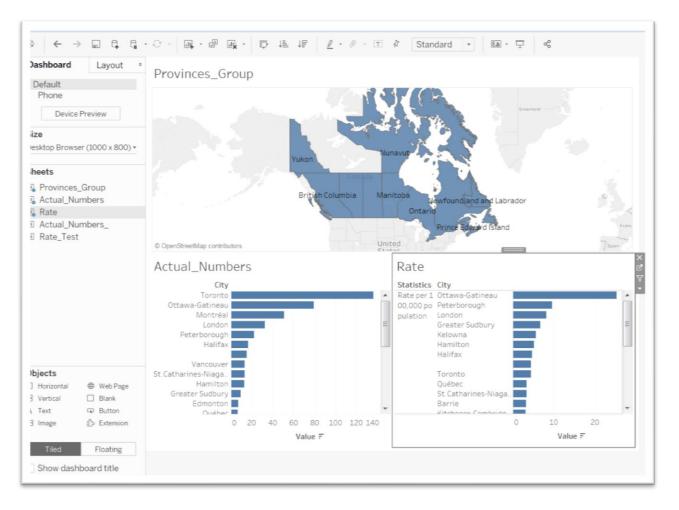




Notice the checkmarks that have been added to the names of the sheets we added to the dashboard pane.

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



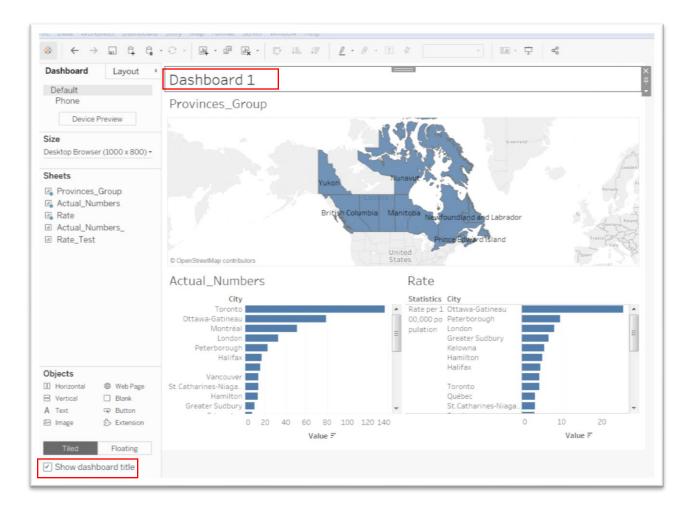


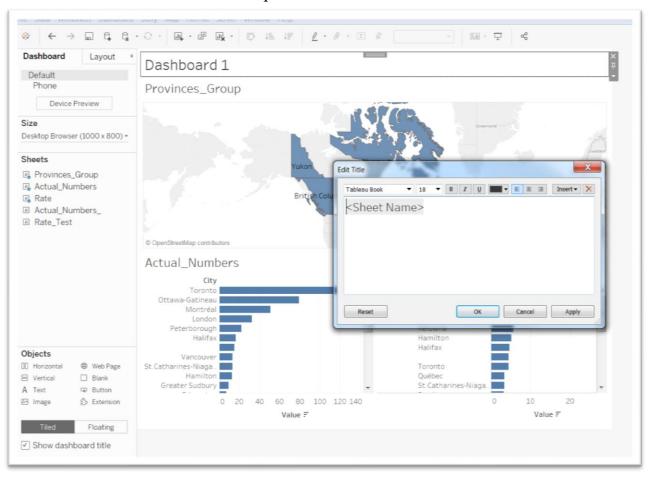
In the "Objects" area, there are options for layout containers and textboxes, which can also be dragged onto the dashboard. You can learn more information by visiting the Tableau website on <u>dashboard objects</u>.

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

Peter Va Objects St.Catharines F 0 Horizontal Web Page Greater Hertical Blank Ec A Text Button 🖂 Image த் Extension Tiled Floating Show dashboard title

Click the box to the left of the "Show dashboard title."





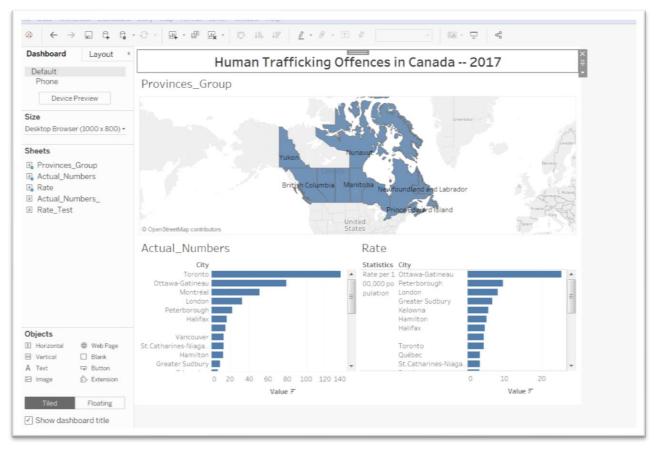
Click on the "Dashboard 1" title to produce the text editor.

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.

Objects Horizontal Vertical A Text Image	 ⊕ Web Page □ Blank □ Button ☆ Extension 	Vancouver St.Catharines-Niaga Hamilton Greater Sudbury Edmonton Québec Thunder Bay
Tiled	Floating	0 20 4
✓ Show dash	board title	

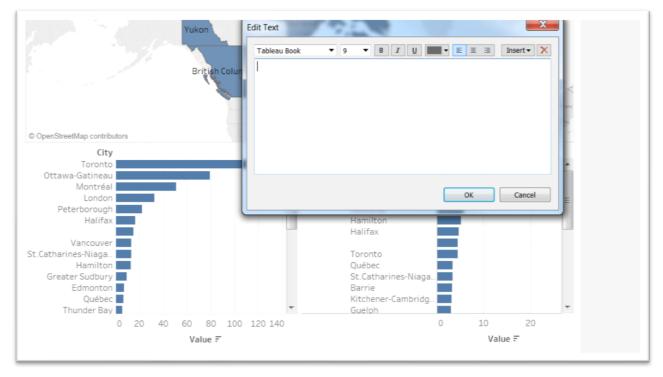
We can do this by selecting the "Text" option from "Objects".

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

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		Peterborough							-		Kelowna				-
		Halifax									Hamilton				
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Objects		Vancouver													
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B Vertical	Blank	Hamilton									Québec				
		Greater Sudbury									St.Catharines-Niaga.				
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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.

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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



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 dropdown 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."

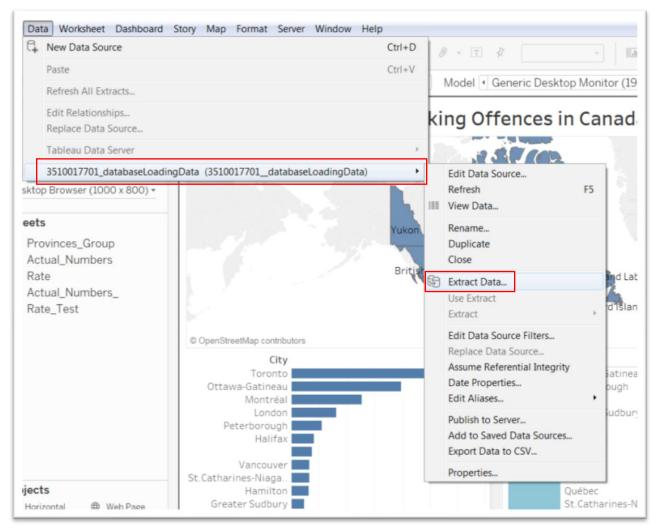
Click OK.

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.



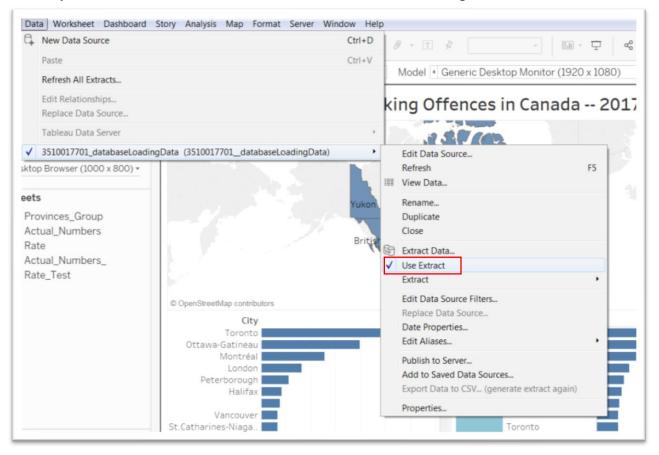
Select "Extract."

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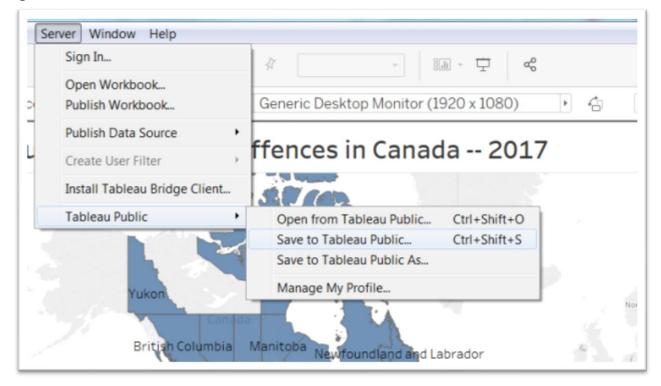
Just go with the default "All rows" selection and press the "Extract" tab.

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

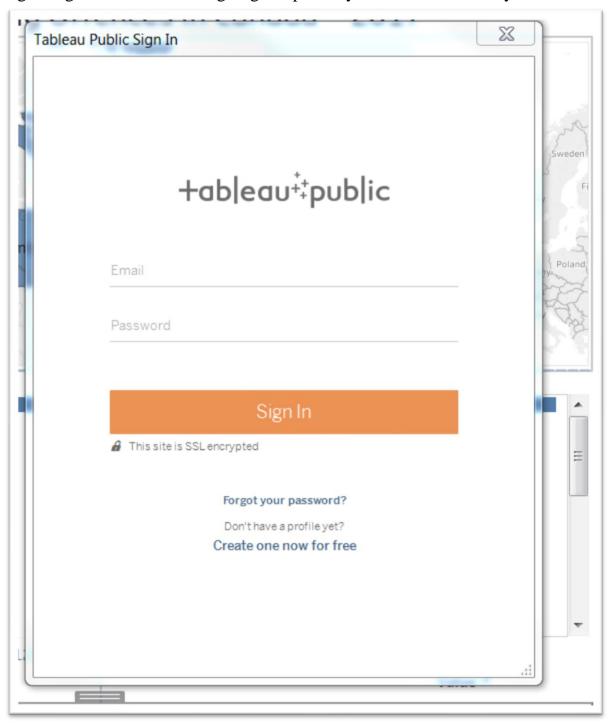
Now if you return to "Data" in the menu, the "Use Extract" option is now checked.



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.

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

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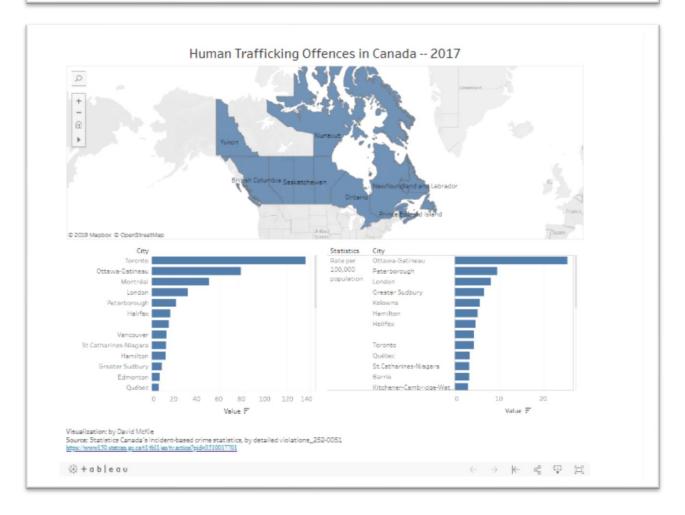


Tableau is an excellent choice for many visualizations, especially for uploading tables with geographic information such as countries or provinces. You can use the

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

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