

## Summary

This walkthrough will walk us through making a similar barchart with the corgis dataset to the one we made in Google Data Studio in prior weeks. We'll move onto some more complex charts after that.

## Notes for instructors:

Example file is the “Dashboard1, SP25” file in the “IS457 Prep Materials (SP25)” Workspace in outlook.

Things that can go wrong:

- Students are unable to connect to the URL listed below (error can be something like “name already exists”) on this screen:

Connection settings

Link to file  Upload file ⓘ

File path or URL \*

Example: [https://contoso-my.sharepoint.com/personal/...](https://contoso-my.sharepoint.com/personal/) [Browse OneDrive...](#)

Connection credentials

Connection [Create new connection](#) ⏪

Connection name

Data gateway [\(none\)](#) ⏪

Authentication kind [Anonymous](#) ⏪

Allow this connection to be utilized with either on-premises or VNet data gateways.

You can also have them try downloading the CSV file and then uploading it themselves.

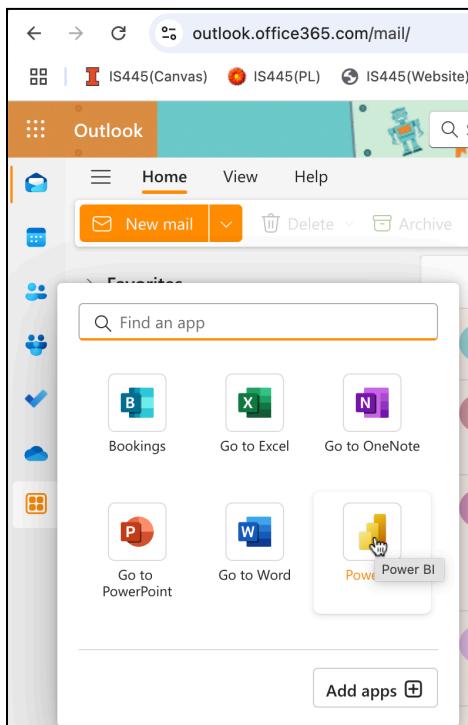
- Students may have issues on the “loading” screen once they make the connection with the data. For this, you can have them wait a while, or if it takes a very long time to load, you can have them refresh the loading screen and do the process again.

## Opening up PowerBI (online, free version)

**Be sure you are using the Chrome browser for this exercise!** (Other browsers *may* work, but at present, Firefox is a bit buggy).

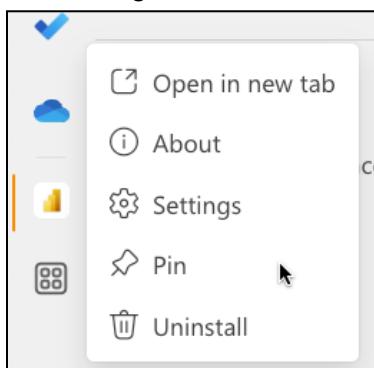
With our UIUC microsoft account, we all have access to the web version of PowerBI. If you're on Windows, you can also download a Desktop version with slightly more options, but *we will be using the online version only for this class*.

If you're in your outlook mail online, you can find the PowerBI app by clicking on the "Apps" logo on the left-panel:



Search for “power” in the “Find an app” search bar and it should pop up if you don’t see the icon right away.

You can right-click and “Pin” the PowerBI app for easy access:



Alternatively, you can click on the link for PowerBI online and then just make sure you sign in with your UIUC credentials: <https://app.fabric.microsoft.com/home?experience=power-bi>

This link is also under “PowerBI resources” at the top of our Canvas page.

Once opened you should see something like the following (though you may/may not have any Reports/Workspaces listed if this is your first time opening PowerBI):

The screenshot shows the Microsoft Power BI Home page. On the left, there's a sidebar with icons for Home, Apps, Metrics, Workspaces (with a dropdown arrow), and My workspace. The main area has a search bar at the top. Below it, there's a "Recommended" section with four cards: "SPA Research Metrics - Public" (by Daniel Harmon), "Explore basic Power BI concepts" (Getting started with Power BI), "Explore the 100 most useful productivity tips" (The definitive 100 most useful productivity tips), and "Cancer status" (Explore this data). A "New items saved to: My workspace" message is visible. At the bottom, there's a "Recent" tab and a table showing recent items: "MessingAround1" (Report, 27 days ago, My workspace) and "Table" (Semantic model, 28 days ago, My workspace). There are also "Favorites", "My apps", and "From external orgs" tabs, along with a "Filter by keyword" and "Filter" button.

## Workspaces, Reports, and Data Models

There are three main “concepts” that we’ll be messing around with when we use PowerBI.

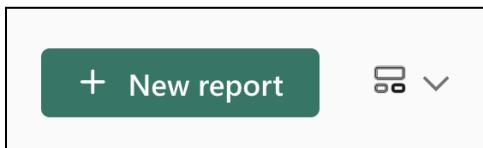
Reports: For the purposes of this course, we will be spending most of our time thinking about the reports as our main space to create visualizations with our data. This is what we’ll spend most of our time.

Workspaces: Are a way to collaborate with others on our visualizations. For the most part we’ll be working in class on “My Workspace” but we’ll also look at how to add workspaces to collaborate with our group, and you all will have access to our class workspace (view only) to get the example PowerBI files.

Semantic Models: For the purposes of this class, we can think of these as a way for us to modify the data we want to use for our visualizations through using Excel-like/Google-sheets-like commands (it can get a lot more technical though if you read the documentation!).

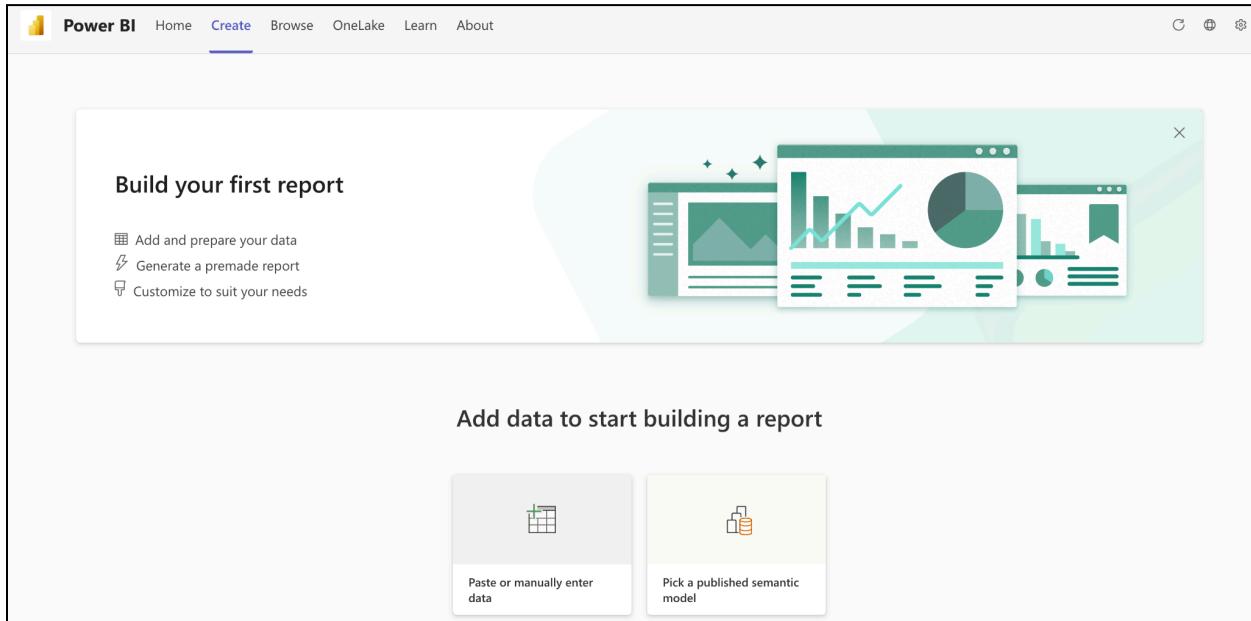
## Making a New Report

Click on the green “New Report” button to make a new report.

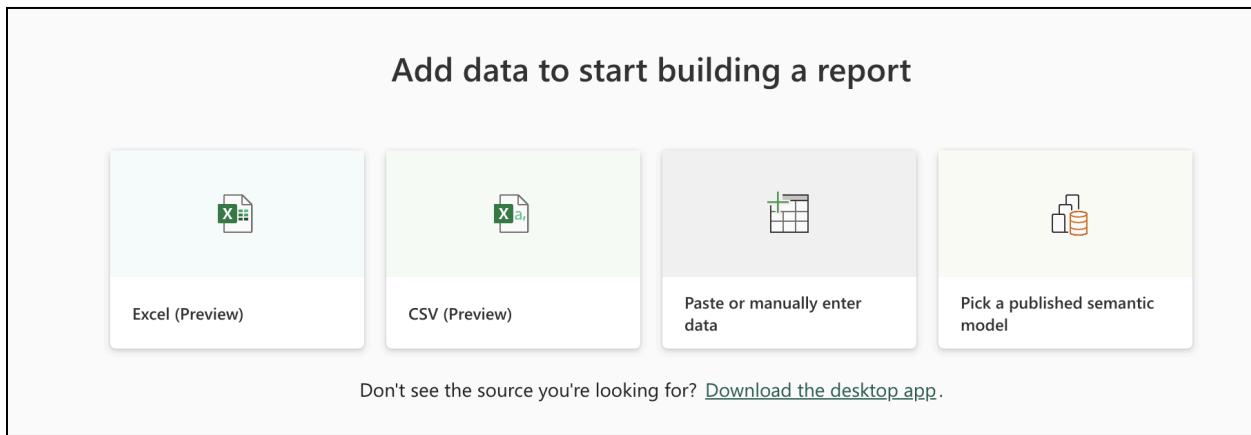


This button should be in the upper left corner of the “main” PowerBI view.

Next, click on the option “Paste or manually enter data” from the 2 options below (if more than 2 options are shown, look at the next step):



This may take you to another screen and/or this screen with 4 options may appear:

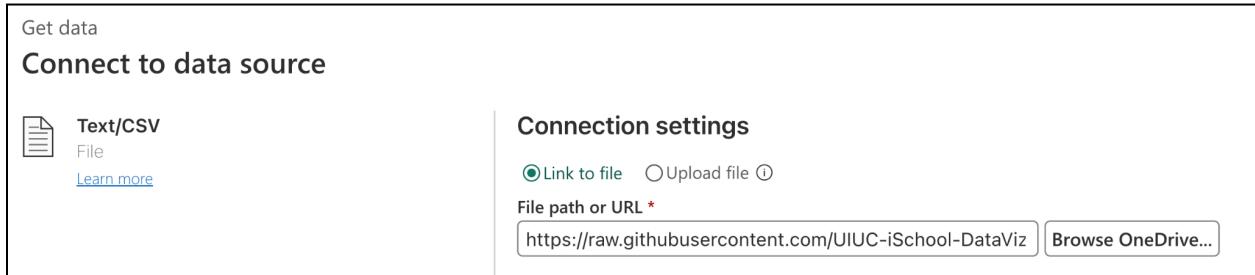


Ultimately, you want to click on the “CSV (Preview)” option.

You can:

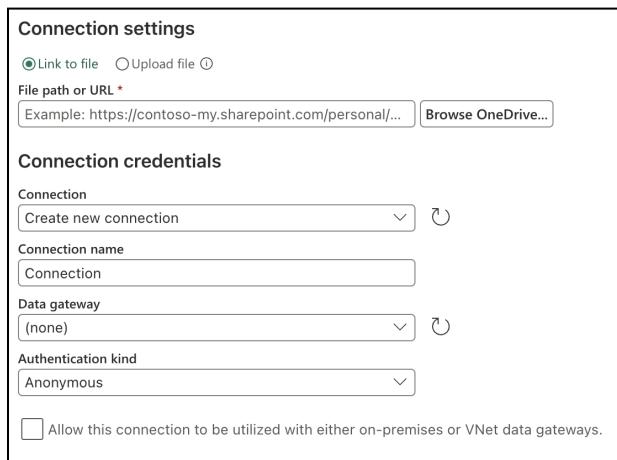
1. upload the CSV file that you downloaded from the prior Google Data Studio activity
2. Upload the CSV file linked on Canvas
3. Or pass the following URL:  
[https://raw.githubusercontent.com/UIUC-iSchool-Dataviz/is445\\_data/refs/heads/main/countries\\_per\\_country\\_over\\_time\\_columns\\_2020.csv](https://raw.githubusercontent.com/UIUC-iSchool-Dataviz/is445_data/refs/heads/main/countries_per_country_over_time_columns_2020.csv)

If doing option 3, you can paste this URL in the URL location:



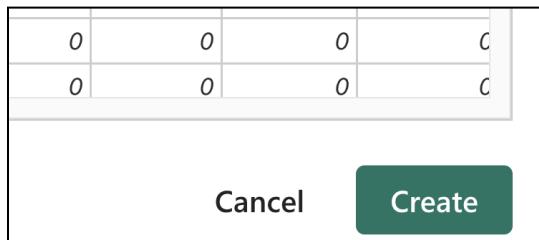
The screenshot shows the 'Get data' interface with 'Text/CSV' selected as the source. In the 'Connection settings' section, the 'Link to file' radio button is selected. The 'File path or URL' field contains the URL: [https://raw.githubusercontent.com/UIUC-iSchool-Dataviz/is445\\_data/refs/heads/main/countries\\_per\\_country\\_over\\_time\\_columns\\_2020.csv](https://raw.githubusercontent.com/UIUC-iSchool-Dataviz/is445_data/refs/heads/main/countries_per_country_over_time_columns_2020.csv).

In either case, be sure to check the following things:



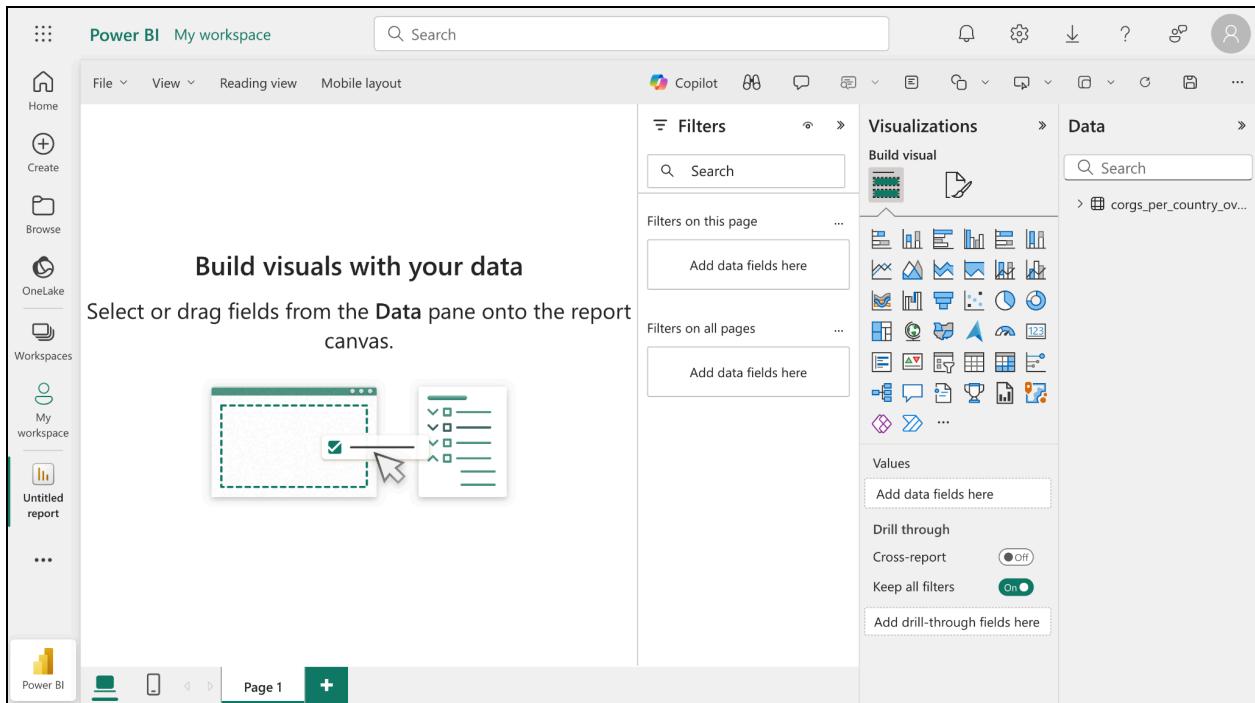
The screenshot shows the 'Connection settings' and 'Connection credentials' sections. In the 'Connection settings' section, the 'Link to file' radio button is selected. In the 'File path or URL' field, the URL is shown as an example: <https://contoso-my.sharepoint.com/personal/>. In the 'Connection credentials' section, the 'Connection' dropdown is set to 'Create new connection', 'Connection name' is 'Connection', 'Data gateway' is '(none)', and 'Authentication kind' is 'Anonymous'. An annotation points to the 'Connection name' field with the text '← connection name should be something unique'. Another annotation points to the 'Authentication kind' field with the text '← authentication kind should be anonymous'.

Then, click on the green “Create” button at the bottom of the “Preview file data” page that shows up:



The screenshot shows a preview table with two rows and four columns. The first row contains '0', '0', '0', and 'C'. The second row also contains '0', '0', '0', and 'C'. Below the preview table is a green 'Create' button.

After this, you should see a “Loading Data” screen that takes a moment to get going. Once the data is loaded you should see an interface pop up like so:

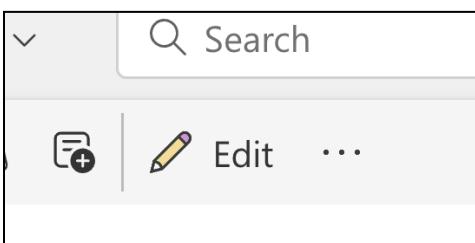


The first thing we want to do is change the name of our report. Click on the “File” option.

Then save it in “My workspace” and give it a useful name (Like “Dashboard1, SP25”).

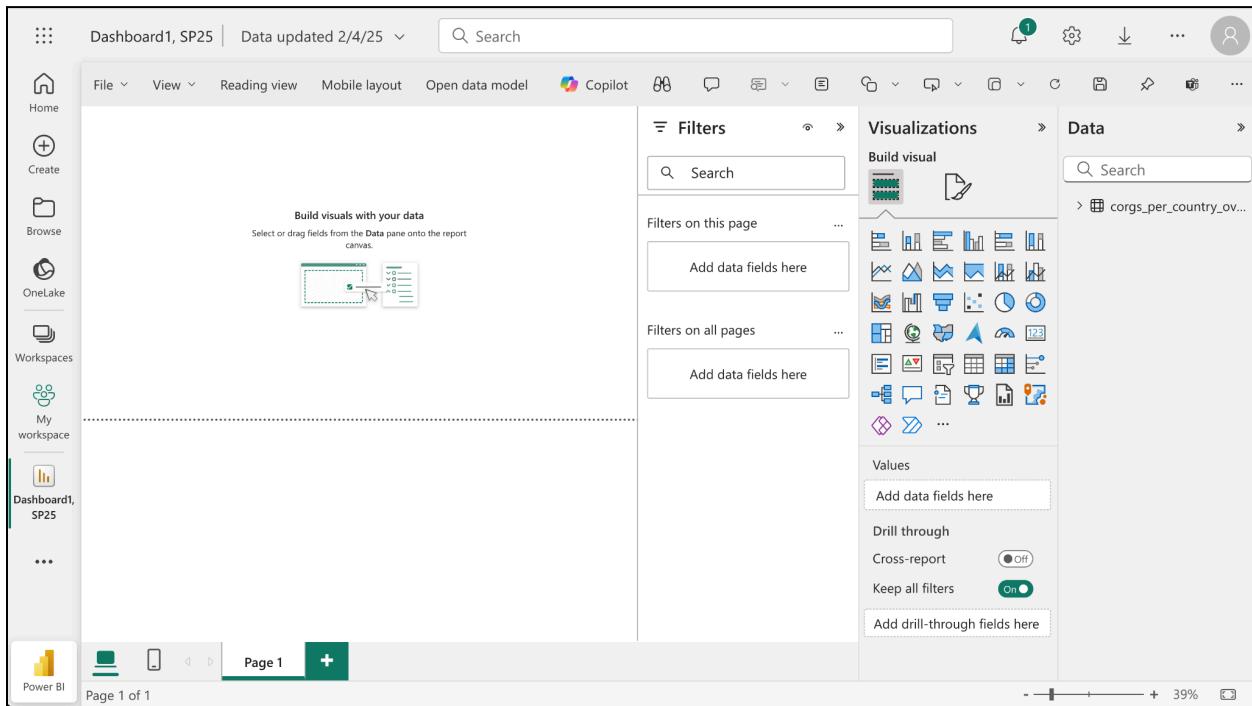
A screenshot of the "Save your report" dialog box. It shows a search bar and a navigation pane with "My workspace" selected. Below is a table with columns "Name", "Type", and "Owner". The table contains three items: "corgs\_per\_country\_over\_time\_columns\_20..." (Semantic model, Jill Naiman), "MessingAround1" (Report, Jill Naiman), and "Table" (Semantic model, Jill Naiman). At the bottom, there is a text input field "Enter a name for your r..." containing "Dashboard1, SP25", a "Select a task" dropdown, and two buttons: "Save" and "Cancel".

This should automatically give you the “View” of your report, but there is nothing there just yet!



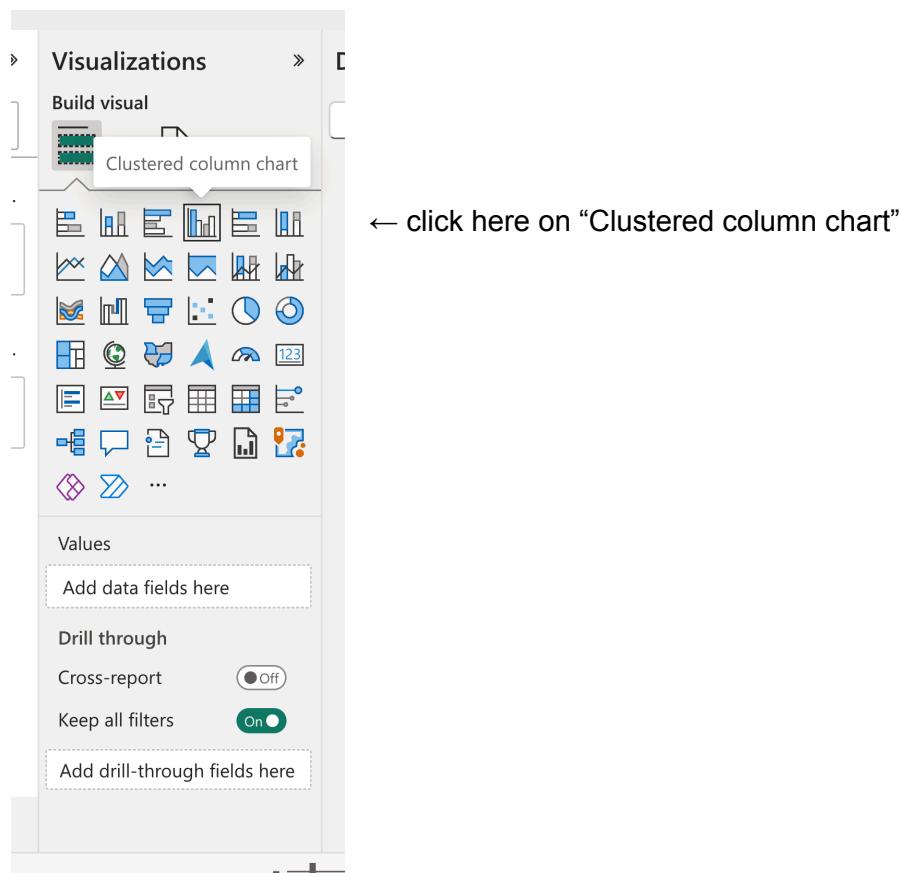
Click on the “Edit” button in the top bar to be able to edit your report.

This should take you back to your original view, but with the name of the report changed to “Dashboard1, SP25”:

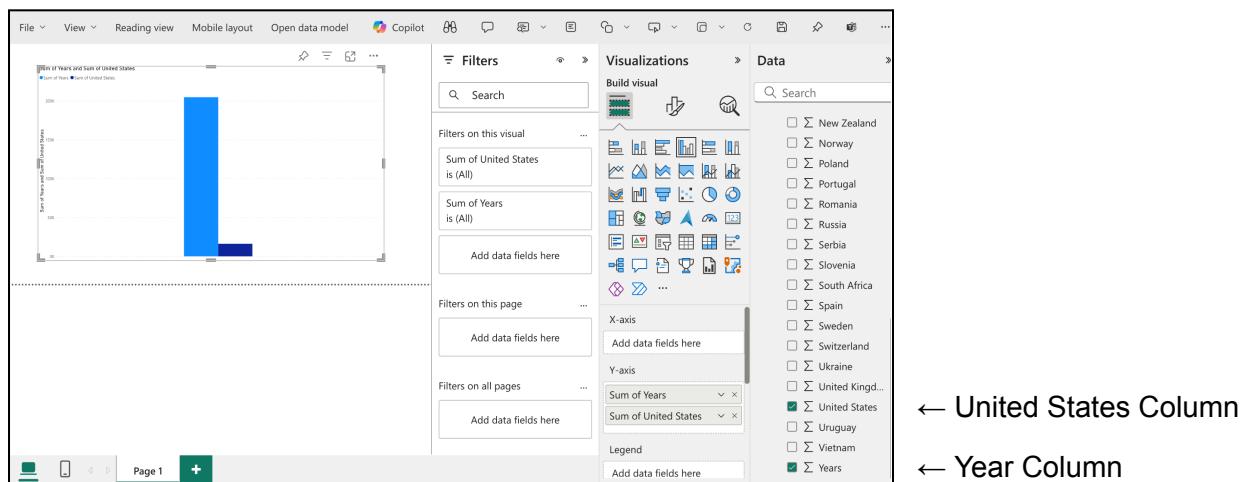


## Make a Bar Chart

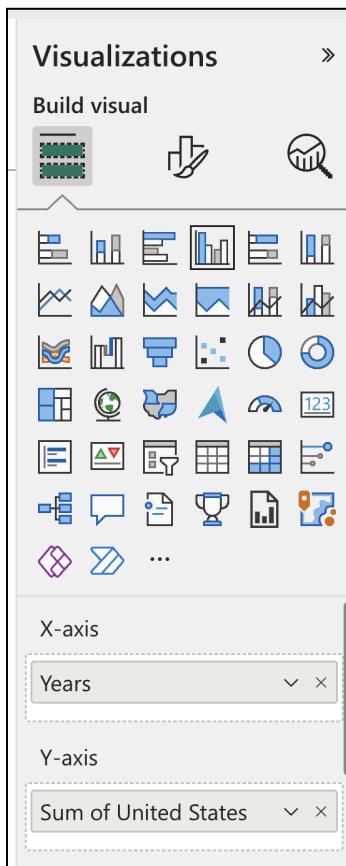
Now we will make a simple bar chart with our dataset.



Now, on the data tab click on the “Years” and “United States” check boxes. You’ll get a not-great-looking chart (feel free to resize it):



To get this to look a bit better, we need to specify that we want the Years to be on the x-axis:

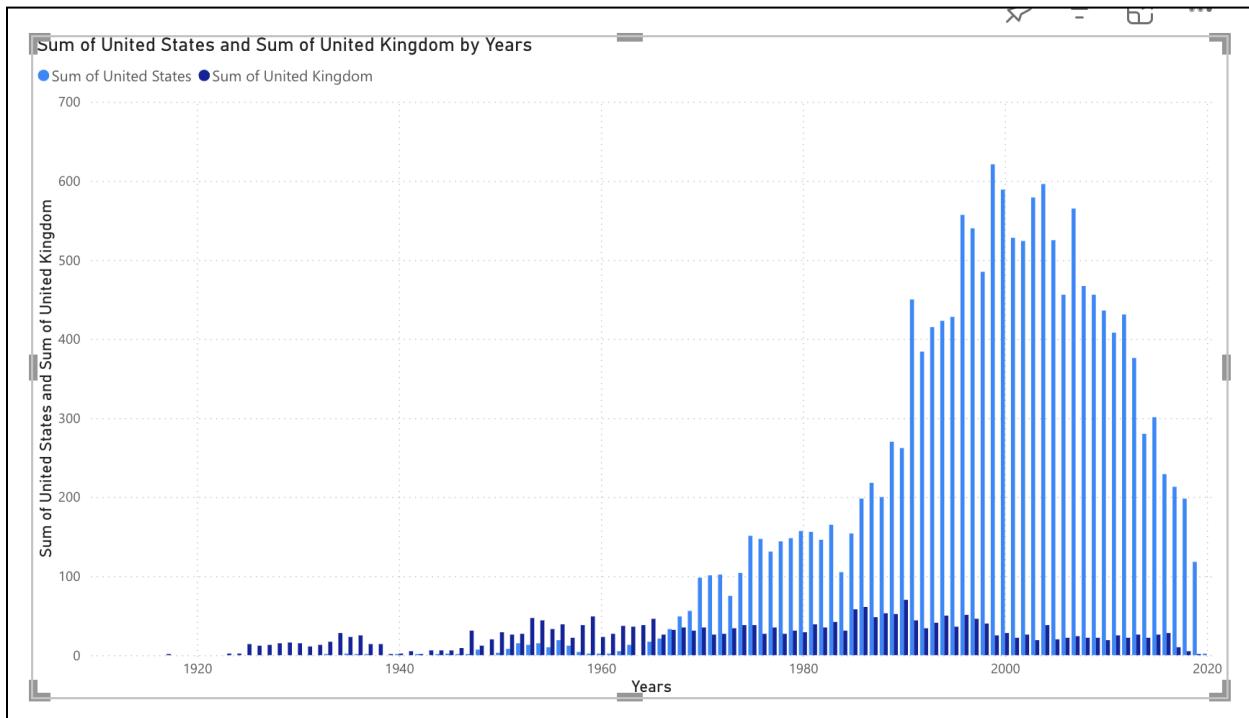


← drag the “Sum of Years” to the X-axis (it will change to just plain “Years”)

Let's add in the “United Kingdom” column. You can do this by dragging the “United Kingdom” column from the “Data” panel to the “Visualizations” panel.



Now we have a plot that compares the number of corgi's born as a function of time. But there are several things wrong with this plot:

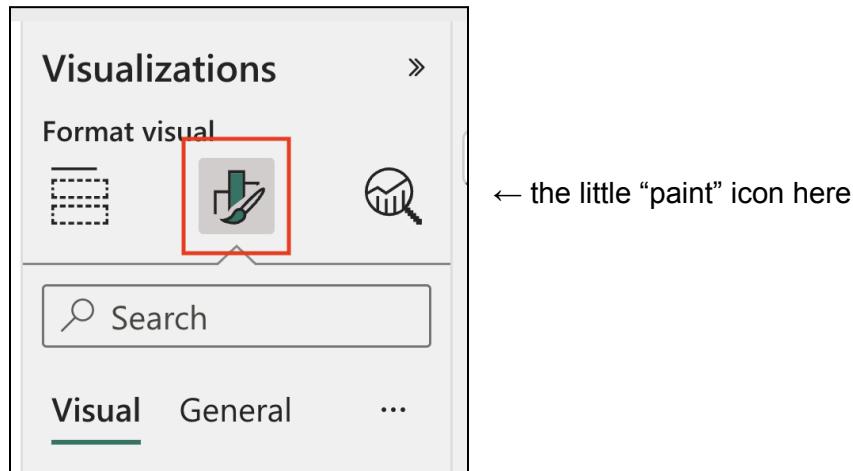


For example:

- The axis labels are too small, as well as the axis tick-marks, and the legend text
- The y-axis title is a mess, as is the overall title of the plot
- The difference in colors between the United States and the United Kingdom is not great

Let's fix all of these!

To fix visual attributes, click on the little "Format visual" icon at the top of the "Visualizations" tab:



For each item, we can click on the “Visual” tab and modify text, and text size:

The screenshot shows the 'Format visual' dialog for a visualization. The 'Visual' tab is selected. In the 'Font' section, the font size input field contains '12', which is highlighted with a red box. To the right of the input field, there is a note: '← set this to something like 20'. Other visible settings include 'Type' (Continuous), 'Range' (disabled), 'Values' (enabled), and 'Title' (disabled).

Visualizations »

Format visual

Search

Visual General ...

X-axis

Type  
Continuous

Range

Values On

Title  
On

Title text  
Auto

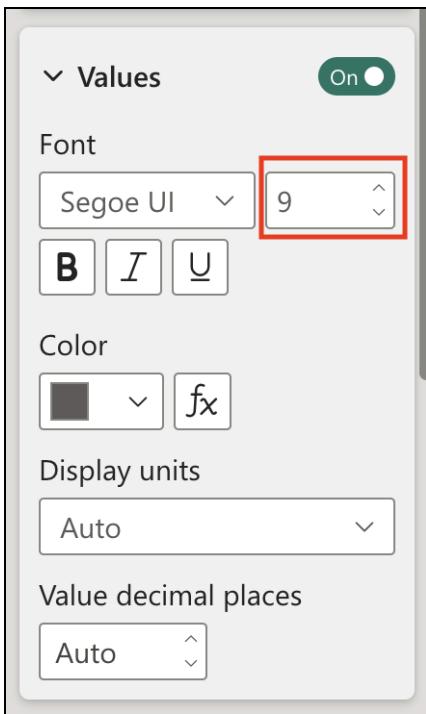
Style  
Show title only

Font  
DIN 12

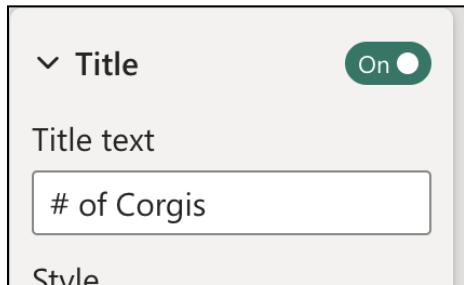
B I U

← set this to something like 20

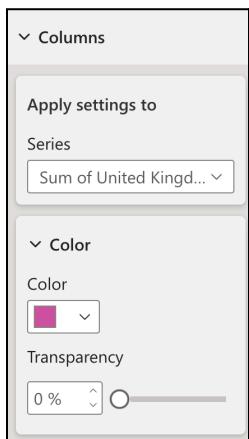
Same thing for the “Values” of the x-axis:



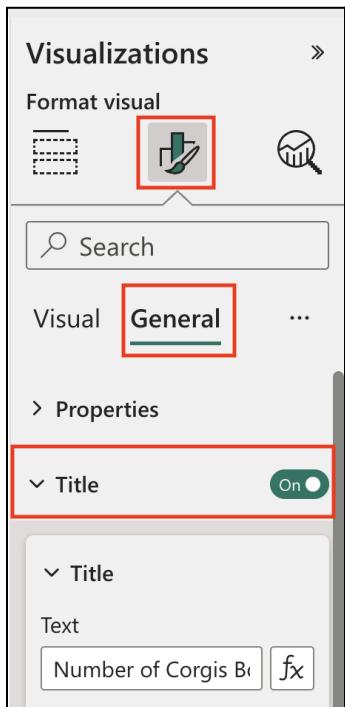
Do a similar type of thing for the y-axis but also set the “Title text” to something nicer:



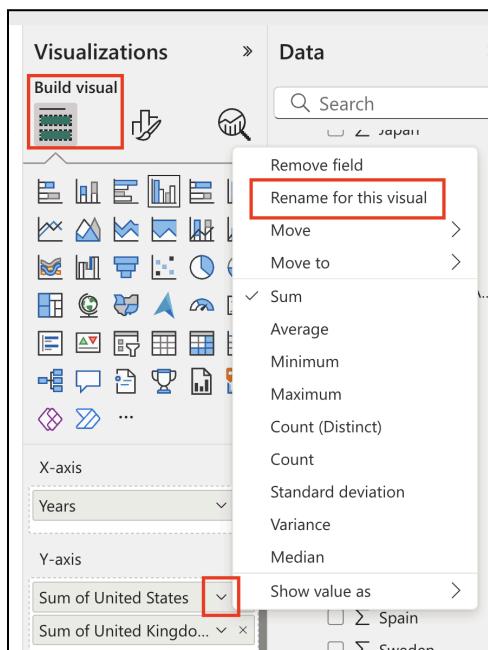
Click on the “Columns” dropdown to pick a new color for our 2nd column:



Click on “General” → “Title” to change the title text:



Finally, we want to re-name our variable names so they show up nicer in the legend. To do this, go back to “Build Visual” panel and click on the little lower-carrot symbol and then on “Rename for this visual”:



Remove both of the “Sum of” from each of the starts of the names.

Be sure to save, and then click on “Read View” at the top to see the final view of our visualization:

