Lab 1: Gapminder Data Visualization

Working with Data of Global Indicators – Gapminder

If you have not heard of Gapminder, please follow the following link to check it out. It is the home of a notorious data visualization created some time ago that was actually presented on in a TED Talk. The "Videos" option at the top of homepage is one way to access many of the videos produced about Gapminder.

Check out Gapminder here

There are multiple options to choose from at the top of the home page, but there are two of particular interest: "Tools" and "Data".

If you navigate to the "Tools" page first you can play around with the data visualization tool yourself. It's pretty amazing as it's REALLY easy to visualize 4+ variables all at once, and to change the variables you want to visualize. Be sure to experiment a little bit before proceeding with this lab.

If you navigate to the "Data" page you'll notice that all of the data that were available to visualize can be downloaded very easily for free.

Exercises

1. If you haven't already done so, create an R Project for our course. From here it should be convenient to navigate to all of our assignments and materials that you organize together.
2. Create a "Data" subfolder and download the `q1data.csv`, `q2data.csv`, and `q3data.csv` files from Canvas to this subfolder.
3. Complete this assignment in an .ipynb file that you will render to HTML using `quarto`. Use a new theme or other visual customizations of your liking to spice up your submission! Just google "quarto themes" to see all the awesome options that are out there!
4. Unless otherwise specified, you should `echo` your code for each of your code chunks so that we can see it in your output file.

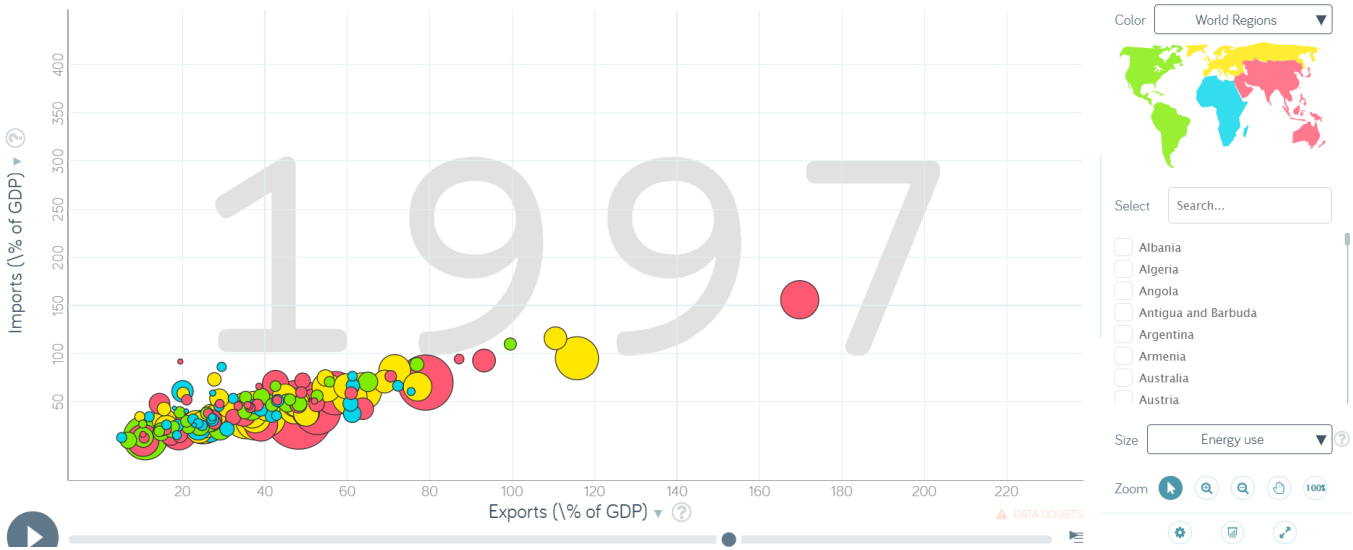
Task 1

Below is a plot of a visualization in Gapminder (the default/starting one actually). Look it over and take note of the variables being visualized.

1. Identify, and list here, what aesthetics are being used and which variables are being mapped to each aesthetic.
2. Import the `q1data.csv` dataset.
3. Recreate the plot as best you can using `plotnine`.
4. What other geometries could you use here besides `geom_point`? Provide an actual plot of another geometry being used here and why it's good or bad for visualizing these data.

Task 2

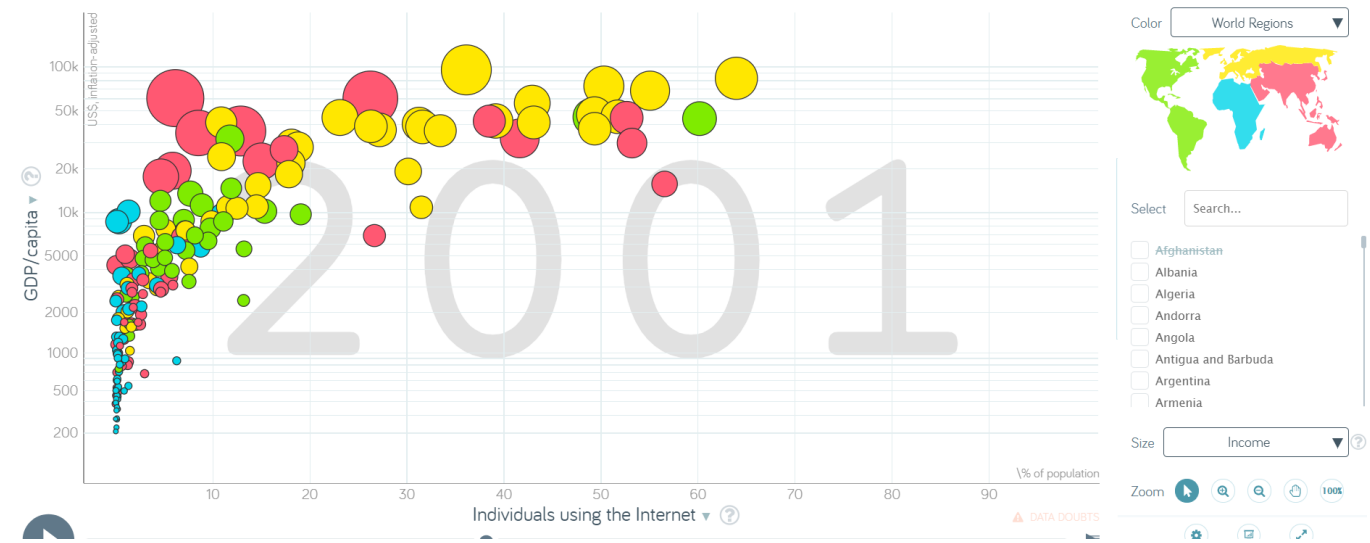
Below is another plot of a visualization in Gapminder. Look it over and take note of the variables being visualized.



1. Identify, and list here, what aesthetics are being used and which variables are being mapped to each aesthetic.
2. Import the `q2data.csv` dataset.
3. Recreate the plot as best you can using `plotnine`.
4. What other geometries could you use here besides `geom_point`? Provide an actual plot of another geometry being used here and why it's good or bad for visualizing these data.

Task 3

Below is a final plot of a visualization in Gapminder. Look it over and take note of the variables being visualized.



1. Identify, and list here, what aesthetics are being used and which variables are being mapped to each aesthetic.

2. Import the `q3data.csv` dataset.

3. Recreate the plot as best you can using `plotnine`.

4. What other geometries could you use here besides `geom_point`? Provide an actual plot of another geometry being used here and why it's good or bad for visualizing these data.