due Thursday, November 10 at 6:00pm **Homework 5**

Please complete each problem and submit a PDF with your solutions. If you use code to solve the problems, you should include it in your submission.

Problem 1 (5 points)

Freedom House is an organization that tracks changes in political rights and civil liberties in the world. The Excel spreadsheet, All_data_FIW_2013-2022.xlsx, contains data for the proprietary survey over the last ten years.

A. Suppose we are interested in seeing how civil liberties have changed in the pandemic era (for our purposes, defined as 2019-2022). First, read in the data and calculate the differences in total civil liberties scores from 2019 to 2022 (1 pt).

B. Using the calculated differences, create a chloropleth map showing the change for every country/territory. Make sure to use a meaningful color scheme using guidelines from the last few weeks–give a brief description of the scheme you used and a justification for using it. According to your chloropleth map, what are the global trends in changes in civil liberties in the pandemic era? (3 pts)

C. Change the Coordinate Reference System (CRS) of your graph. (1 pt)

R Solutions

Problem 2 (5 points)

Problem 2 will be posted after November 8 and will deal with next week's topic, Visualizing Uncertainty.

Problem 3 (10 points)

Problem 3 will be posted after November 8.