ECONOMICS 691 – GROVES – FALL 2021
HOMEWORK ASSIGNMENT #3

Northern Illinois University

For this assignment you will write the code necessary to complete each step and commit and push it to your GitHub repository which you have previously shared with me. In addition to the code, you will use the output from this assignment to create a BEAMER presentation as part of your final grade for both this homework 3 and for the final homework from Dr. Klis' part of the class.

PART 1:

- Go to and download the County level data for the Presidential Elections from the MIT Election Data Science Lab (https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/VOQCHQ)
- Clean this dataset to contain ONLY the counties from the states you were assigned in Homework 2 and for only the 2020 Presidential Election.
- Create a SINGLE dataframe called D_VOTES which calculates the change in the votes received by the Republican candidate and the Democratic candidate between the 2016 and 2020 elections. For those that may not know, in 2016 and in 2020 the Republican candidate was Trump, in 2016 the Democratic candidate was Clinton and in 2020 the Democratic candidate was Biden. Also note that the percentage share of votes received should be relative to votes casted for ONLY the two major candidates (Republic and Democrat).

PART 2:

- Merge the above data with the data from CENSUS.2 (the 2020 data) from last week's assignment.
- Using ggplot2, generate a map with the change in the vote for the Republic candidate for your states with an added layer for the boarders of your states. Remember that this graph should be in color, not have the latitude and longitude notations, and should have a clear title and legend.
- Using ggplot2, generate a map with the change in the vote for the Democratic candidate for your states with an added layer for the boarders of your states. Remember that this graph should be in color, not have the latitude and longitude notations, and should have a clear title and legend.

NOTE: You will need to add the following line of code to save the graphs in the .eps format which you will use in your BEAMER part of the assignment: `ggsave(g, file="name.eps", device="eps")`

PART 3:

- Merge your data set above with the CENSUS.3 data and generate and report in your presentation slides the results from the following models:
    - Regress the change in the votes for the Republic candidate against the percentage of the 2019 population of each county that is Male and White.
    - Regress the change in the votes for the Democratic candidate against the percentage of the 2019 population of each county that is Male and White.
    - Regress the change in the votes for the Republic candidate against the change in the percentage of the population between 2016 and 2019 of each county that is Male and White.
    - Regress the change in the votes for the Republic candidate against the change in the percentage of the population between 2016 and 2019 of each county that is Male and White.
    - Repeat the previous two models adding state level fixed effects.

- Using the Export → Copy to Clipboard feature in the RStudio Plots tab, copy each plot and place then in a Word document. You should resize the three graphs so that they all three fit on a single page. Save this as a .PDF file and then add it via the GitHub website (you can drag and drop) to your repository.