Exercise: Mapping Educational Attainment in New York

Summary

This exercise is an introduction to QGIS. It focuses on mapping educational attainment data for New York State.

Input Data

There are two input files on the Google drive for the course: **tl_2016_us_county.zip**, a shapefile giving the boundaries of New York counties, and **attainment.csv**, a file containing data from the Census about educational attainment for New York counties. Variables in the attainment file with prefix `'pct_'` give the percentage of the population having educational attainment in one of five categories: less than high school (`<hs`); high school or GED (`hs`); some college or an associate's degree (`some_col`); a bachelor's degree (`ba`); or a graduate or professional degreee (`grad`). The ratio variable gives the ratio of people with a BA or more (`ba` and `grad`) to those with a high school diploma or less (`<hs` and `hs`).

Deliverables

One QGIS project file called **attain.gqz** and two PNG images: one called **below_hs.png** that is a heat map of the `'pct_<hs'` variable in `attainment.csv`, and another called **ratio.png** that is a heat map of the `'ratio'` variable.

Instructions

1. Start a new project in QGIS.

2. Add the layer with country boundaries.

3. Use Save As to save the project in the GitHub directory for the assignment under the name `'attain'`. The extension `'.gqz'` will be added automatically (if you're using an older version of QGIS it may be different). Be sure the file ends up in the directory for the assignment so it will be pushed correctly.

4. Add county name labels and turn on the text buffer around the name.

5. Add the `'attainment.csv'` file.

6. Join `'attainment.csv'` onto the county layer using `'geoid'` as the join key and `'at_'` as the variable prefix.

7. Construct the heat map for `'at_pct_<hs'` using equal intervals and 5 classes. You can use any color scheme you like.

8. Save the project again.

9. Export the map as **below_hs.png** and save it in the directory for the assignment.

10. Change the heat map to show `'at_ratio'`. Use pretty breaks and 5 classes. You can use any color scheme you like.

11. Export the new map as **ratio.png** to the directory for the assignment.

Submitting

Once you're happy with everything and have committed all of the changes to your local repository, please push the changes to GitHub. At that point, you're done: you have submitted your answer.

Tips

- If you want, you can create the second map by right-clicking on the first county layer, selecting 'Duplicate Layer', and then editing the new layer to match the second set of specifications. If you do that, you should rename the duplicated layer to something more meaningful than the original name with "copy" added. Right

click on the name and look for the Rename Layer option. Once you've created the new layer you can switch back and forth between them by clicking on the check box next to the layer name in the Layers Panel.