SOC 4650/5650: Lab 1-3 - Mapping Owner Occupied Housing in St. Louis

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Directions

Using data from the `data/lab_data/` folder available in the `module-1-cartography` repository, create a static `ggplot2` map using RStudio. Your entire project folder system should be uploaded to GitHub by Monday, February 14th at 4:15pm.

Analysis Development

The goal of this section is to create a self contained project directory with all of the data, code, map documents, results, and documentation a project needs.

Download Data

a. **Clone** the `module-1-cartography` repository from GitHub using GitHub Desktop.[1]

[1] If you are not sure where your GitHub Desktop data has download to on the computer, you can right click on the repo's entry in GitHub Desktop and have it take you to the repo in Windows File Explorer. By default, this should be within your `Documents/` directory.

Create a Project Folder System

b. Rename the folder in your assignments repository's `Labs` directory from `Lab-03` to `Lab-1-3`.

c. Using RStudio, add an R Project to the *existing* directory in your assignments repository named `Lab-1-3`. To do this, you will want to go to: File ▷ New Project ▷ Existing Directory and find your *existing* `Lab-1-3` folder.

d. In the Files tab on the lower right-hand side of RStudio's screen, add a New Folder using the New Folder button right below Files. Name this new folder `docs`. Add three others named `data`, `results`, and `source`.

e. Reduce RStudio for a moment. Using the Windows File Explorer (or macOS Finder) app, find your project as well as the repository you cloned previously. It is easiest if these are in two separate windows.

f. Drag the lab data from `data/lab_data/` into your RStudio Project's `data/` subdirectory. Verify using RStudio that all of these data are accessible from within your project. You should also bring over the city boundary data from the `data/` folder.

g. Using a similar process, move the `map_breaks.R` file from the `module-1-cartography` repository's `source` subfolder into your Lab's `source` subfolder.

Create an R Markdown File

f. Back in RStudio, create a new notebook by going to File ▷ New File ▷ R Markdown. Choose the SLU Sociology template and save it within that `docs/` subdirectory you just created. The notebook should be named `Lab-1-3`.

g. Expand the YAML heading by adding your name and the assignment title "Lab 1–3".

h. Use RMarkdown syntax to create your first assignment notebook! Make sure it has an introductory section, a section for loading packages, a section for loading data, and sections for parts 1 and 2 below. These sections should be second-level headings (e.g. `## Introduction`).

i. When you are done, "knit" your document by clicking the Knit button in the toolbar at the top of the notebook.

Load Data

j. Import all of the data for the assignment into your global environment.

Part 1: Exploration

The goal of this section is to initially explore the data. You should produce an interactive visual preview of the data using the `mapview` package. You *do not* need to include this exploration in your notebook, but can do it in the console instead. Do provide a written description of what types of data (point, line, or polygon) are represented by these various layers.

Part 2: Mapping

The goal of this section is to create an appropriately normalized map using `ggplot2` of owner occupied housing in St. Louis. You map should be "binned" using five classes selected from an algorithm of your choice. You should use either the `RColorBrewer` the `viridis` package for your color palette and should include a title, subtitle, and caption. Also add and thoughtfully symbolize the other contextual data as ground layers. Make sure to save your map in the `results/` folder when it is complete!

Analysis Development Follow-up

Don't forget to knit your document when you are done!