

(DRAFT)

Fatemeh Hakimi - Final Project Proposal

Your Name and Date

Fatemeh Hakimi, April 3, 2025

Project Title

Visualizing Demographic and Economic Patterns in Iowa Counties Using Interactive Web Maps

Abstract

This project aims to present key demographic and economic statistics for Iowa counties using interactive web mapping technologies. Data from the U.S. Census Bureau's American Community Survey (ACS) will be used to explore indicators such as median household income, education levels, and housing statistics. The final product will provide users with an intuitive way to explore county-level data through maps and tooltips. The project will use Leaflet and R to design and publish an HTML-based map for the LA 5580 project gallery.

Overview

This project aims to utilize my knowledge in TidyCensus, R, and web mapping to create a digital product that communicates spatial patterns in Iowa. I plan to focus on county-level ACS data, particularly median household income, housing value, and the percentage of individuals with a bachelor's degree or higher. The project will combine data cleaning, spatial transformation, mapping, and export as an HTML file.

This project builds on skills learned in previous assignments (such as Assignment 4) and extends them to produce a more polished, public-facing product. The interactive maps will include customized tooltips, legends, color palettes, and map titles. The viewer can interact with the map to better understand regional patterns across Iowa.

Technology

- R (TidyCensus, sf, Leaflet)
- GitHub Pages for publishing
- Optional: Tableau for comparisons
- RStudio environment

Data

- U.S. Census Bureau's American Community Survey 5-year estimates (2023)
- Variables such as B19013_001 (Median Household Income), B25077_001 (Median Home Value), and B15003 series (Educational Attainment)

Process / Methods

- Use TidyCensus to acquire ACS data
- Use SF to transform and process geographic boundaries
- Create interactive maps using Leaflet
- Style maps with colors, labels, and tooltips
- Export to HTML using htmlwidgets
- Upload the final product to GitHub

Inspiration

- Tableau Public Gallery
- Walker Data Examples (<https://walker-data.com>)
- Previous assignments in LA 5580

Potential Challenges

- Ensuring the HTML map looks professional on all screen sizes
- Dealing with label overlaps
- Ensuring color palettes work well for data distribution
- Uploading and linking HTML files in GitHub correctly

Timeline for Completion

- April 3–7: Finalize the dataset and acquire all variables
- April 8–10: Generate maps using Leaflet and test popups
- April 11–14: Final edits and adjustments (design, interactivity)
- April 15–17: Upload final HTML to GitHub and test link
- April 18: Submit final version to GitHub and Canvas