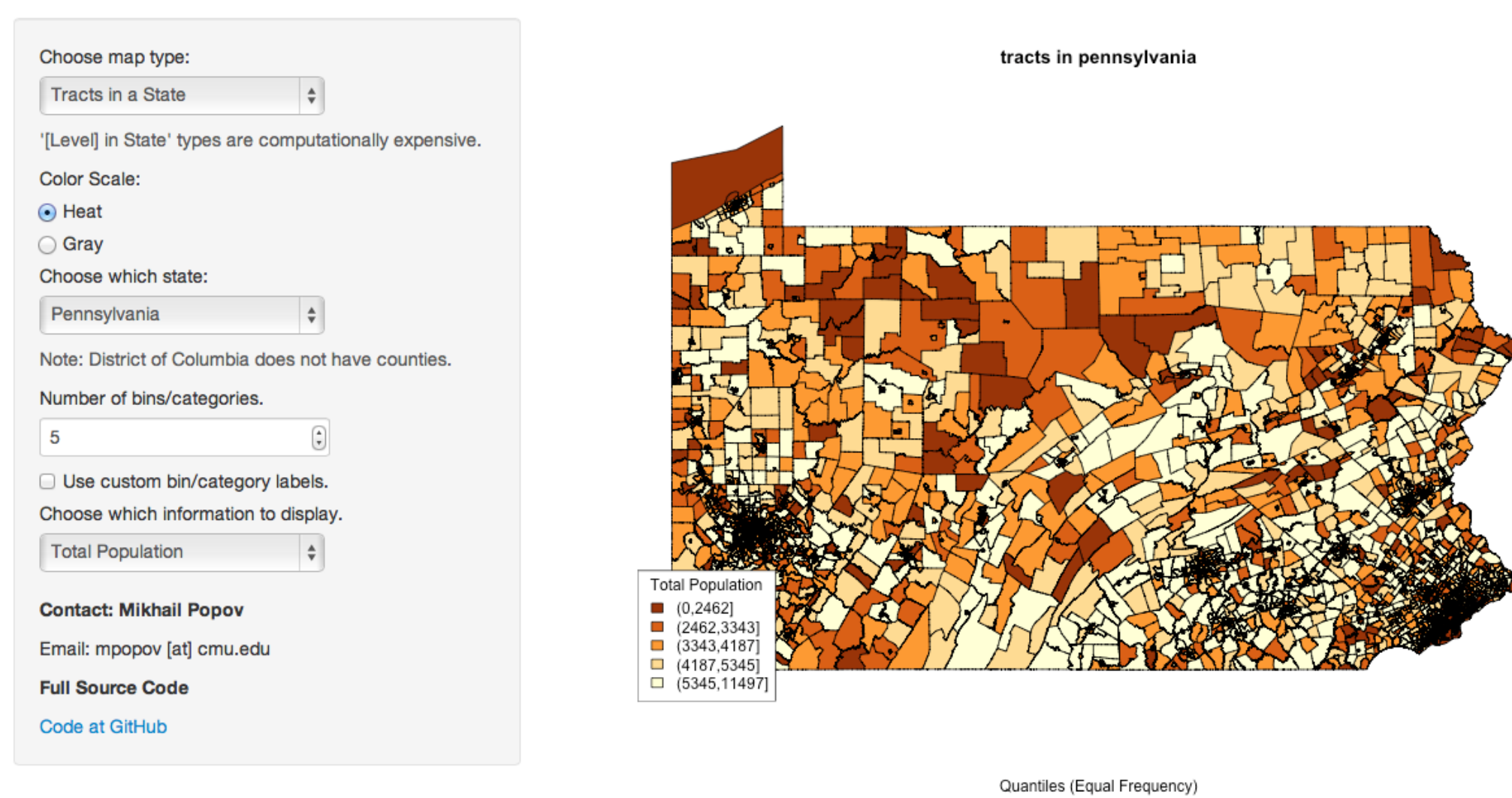




Project Goal

My goal in starting this project was to develop a Shiny application which allows anyone to explore the 2010 US Census data quickly and interactively without any coding.

Demonstration URL



Live Demo running on Amazon Elastic Compute Cloud (EC2)
<http://shiny.mpopov.com:3838/census/>

Introduction

Combines two R Packages:

- **UScensus2010** by Zack W. Almquist (UCI)
Contains shape files and additional demographic data.
- **Shiny** by RStudio Team
Develop interactive web applications in R.

This web application is an interactive interface for making choropleth maps.

A **choropleth map** is a map in which areas are shaded or patterned according to some measurement.

User can view

- a state
 - at county level
 - at tract level
 - at block group level
- a county in a state
 - at tract level
 - at block group level
- Block level disabled for computational reasons.

Application Details

Choose map type:
 Tracts in a County

'[Level] in State' types are computationally expensive.

Color Scale:
☒ Heat
☐ Gray

Choose which state:
 Pennsylvania

Note: District of Columbia does not have counties.

Choose which county:
 allegheny county

Number of bins/categories.
 6

☐ Use custom bin/category labels.

Choose which information to display.
 Total Population

Contact: Mikhail Popov
 Email: mpopov [at] cmu.edu
Full Source Code
[Code at GitHub](#)

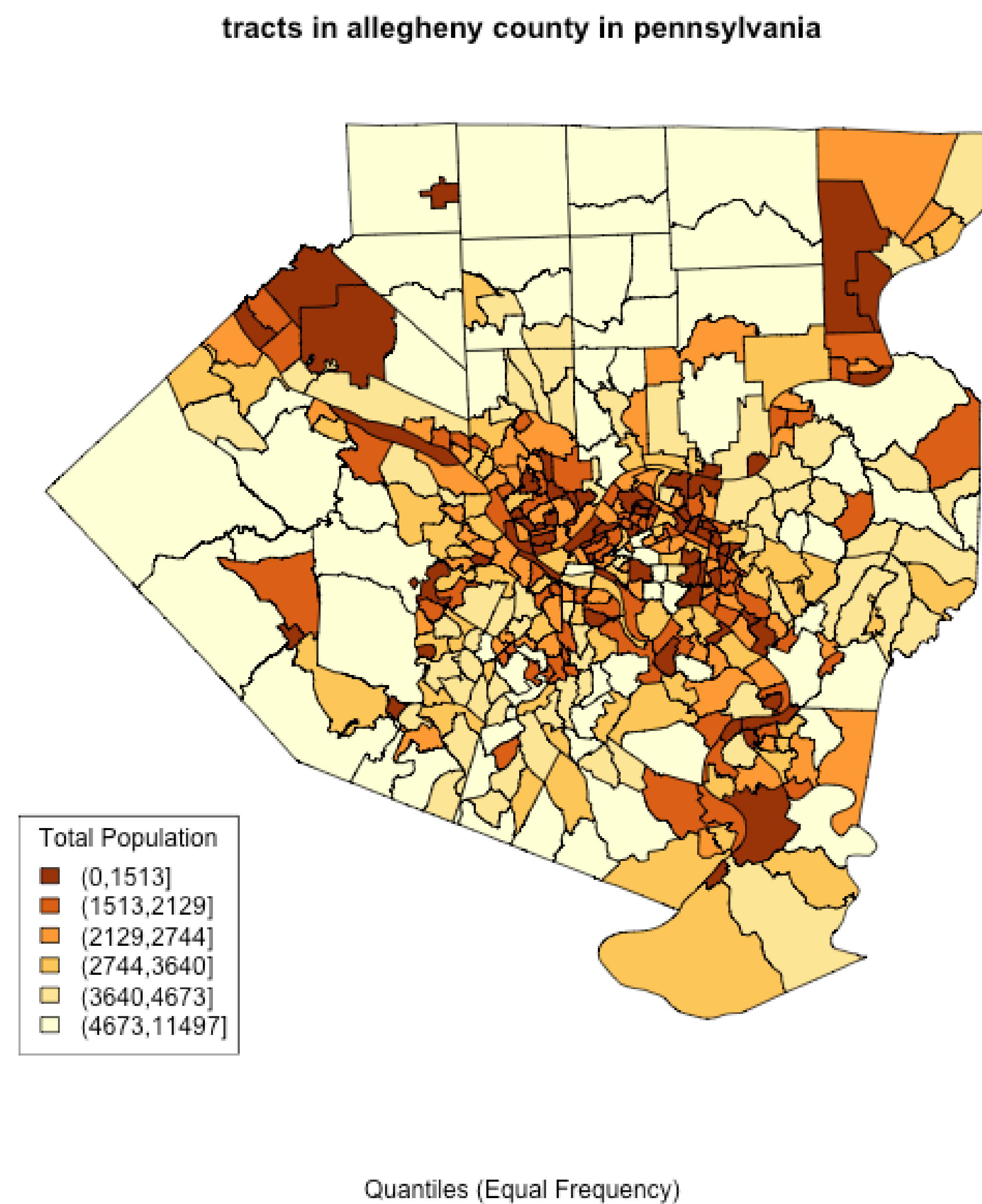
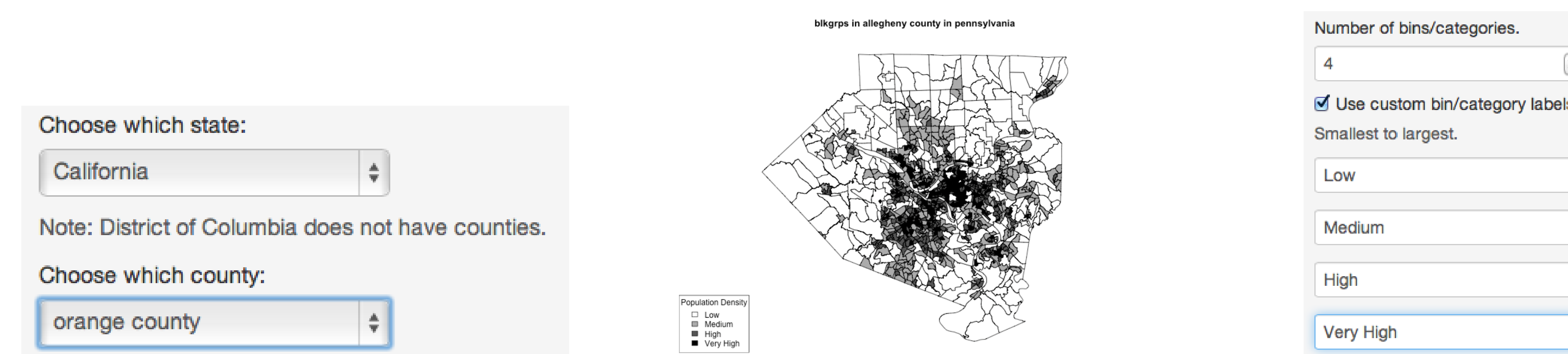


Figure: Choropleth map of the total population in Pennsylvania (Allegheny County) at tract level with 6 labeled bins (equally spaced quantiles).



(a) Application dynamically loads a list of counties for the state of interest and allows the user to select which county to look at.

(b) User can switch between heat colors and a gray scale.

(c) The application responds to number of bins and allows user to specify custom labels for the bins.

Advantages

- Anyone can use
- No R installation or coding required
- No need to download census data
- Accessible from anywhere
- Extensible; can be modified:
 - to use other data e.g. ACS
 - to include more features
- Viewable in any modern browser

Possible Future Work

- Go through the 450+ census variables defined in the SpatialPolygonDataFrame objects and create a proper index.
- Allow the user to define custom breaks (currently using equally-spaced quantiles).
- Allow the user to define new variables as functions of existing variables.
- Add an Upload feature to enable uploading of new data. Matching done via FIPS codes.
- Enable Downloading of the choropleths as high resolution PDFs or PNGs.

Full Source Code and Instructions

2010 US Census Shiny App source code

<https://github.com/bearloga/2010-US-Census-Shiny-App>

Tutorial: Building Shiny Applications with R

<http://rstudio.github.io/shiny/tutorial/>

Installing Shiny Server on Amazon EC2

<http://mpopov.com/post/40976561625/shiny-server-amazon-ec2-guide>

Acknowledgments

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