Assignment 4

STA 141A

Due **November 6 at 10:30am**.

Assemble your answers into a report. Please do not include any raw R output. Instead, present your results as neatly formatted tables or graphics, and write something about each one. You must **cite your sources**. Your report should be **no more than 10 pages** including graphics, but excluding code and citations. Think carefully about what information is important to include.

When you are finished, submit a digital copy on Canvas. The digital copy must contain:

- Your report as a PDF file, with your code in the appendix.

- Your code as 1 or more R scripts.

Your submission will be graded according to the STA 141A grading standards, which are available on Canvas.

Description

In this assignment, you will continue to examine the Craigslist data set to:

- Study the spatial characteristics of the rental market.

- Combine with demographic data from the US Census Bureau to make further inferences.

The US Census Bureau provides a variety of data sets (including spatial data sets) online. As a starting point for Question 3 in this assignment, a zip file with demographic data for California places is available on Canvas. The data set in the zip file is from the 2010 US Census, and has place names that approximately match those in the Craigslist data set.

Ask questions on Piazza and in office hours to get help with merging the data.

Questions

1. Use maps to explore at least 3 features of the Craigslist posts in Davis. In other words, come up with some meaningful questions, answer them, and then discuss your findings (and limitations). You may use other kinds of statistics and graphics *for support.*

2. Repeat question 1 for the southern half of the San Francisco Bay Area (counties San Francisco, San Mateo, Santa Clara, Alameda, and Contra Costa). Can you make stronger conclusions about the San Francisco Bay Area than you could about Davis? Why or why not? Explain.

3. Choose one question to answer using the US 2010 Census data together with the Craigslist data:

   - Which places in the southern San Francisco Bay Area have the oldest populations? How does this relate to the rental market, if at all?

   - Which major cities in California are the most diverse? How does this relate to the rental market, if at all?

   Make sure to say which question you chose to answer.

Additional Data Sets

If you want, you can find additional data sets from the Census Bureau on the American Fact Finder website:

https://factfinder.census.gov/faces/nav/jsf/pages/download_center.xhtml

The "American Community Survey" and the "Decennial Census" are the most likely sources of useful information.

You can find shapefiles from the Census Bureau at:

https://www.census.gov/geo/maps-data/data/tiger-cart-boundary.html

Using shapefiles is **not required** for this assignment, but they may be useful for adding detail to your maps or for matching additional census data to Craigslist posts.