Assignment 4
Due 10/23/2017

This assignment investigates the effect of unemployment on rental prices. There are two datasets online, which are described below:

1. *Zillow-Rents.txt*: This file is taken from Zillow's research website and is a summary file featuring Zillow's median rent value by zip code in the United States.

2. *IRS-Tax Filing.txt*: This file is provided by the IRS. It features data on individual income tax statistics by zip code. The data include information on the number of returns filed, number of single returns filed, total taxable income, total student loan interest deductions, and total unemployment compensation in each zip code (in thousands).

To investigate the topic, you'll need to merge the two datasets on zip code (be sure to drop any observations with missing data). Then, specify a simple linear regression model, where the outcome variable is Zillow's median rent value and the covariates include an intercept, number of returns filed, number of single returns filed, total taxable income, total student loan interest deductions, and total unemployment compensation. The effect of unemployment compensation on rental prices will give insights into our topic of interest (while controlling for income and other characteristics).

(Note: The data feature large numbers. It is recommended that you transform the variables by $\log(variable_i + 1)$. The "+1" is to deal with values that are 0.)

Recall, the simple linear regression model (in matrix notation),

$$y = X\beta + \varepsilon,$$

can be estimated using ordinary least squares (OLS).

Please submit the following:

- All code and final data
- A brief discussion of the model and estimation procedure
- Tables of regression results
- An analysis and discussion of the findings.

Be sure to zip-up the files before submitting online.