Homework 2 - GVPT 729A

Answer the following questions. Include your code, and report all the results you used to answer the questions.

https://raw.githubusercontent.com/Neilblund/729A/master/data/world.csv
The dataset at the link above contains information on cross national voter turnout (votevap) among the voting eligible population and per-capita GDP (gdppcap08).

1. Estimate the effect of per-capita GDP on voter turnout using OLS.
2. Estimate the effect of per-capita GDP on voter turnout using the maximum likelihood estimator.
3. Take random samples of size 40, 30, and 20 from your dataset. Estimate the same model you used in questions to answer questions 1 and 2, and compare your results.
    - What differences do you notice between the OLS and MLE results?
    - What characteristics of MLE and OLS estimators explain these differences?

notes

- Turning off scientific notation can make it a little easier to make comparisons between your results. Use the command:

```
options(scipen=999)
```

  To turn off scientific notation. Turn it back on by resetting "scipen=0"

- You can format your tables however you see fit, but make sure you include the relevant information.
- http://www.statmethods.net/management/subset.html has code for taking random subsets from a data frame.
- If you want to reproduce your results later, you can set R's random number seed with this command:

```
#the number itself doesn't matter
set.seed(1000)
```