POU33011: Assignment 1

Thomas Chadefaux

Instructions

- Due date: Friday 17:00, end of week 4. Please submit your document via Blackboard.
- Submit a single document including the R code used and your answers.
- In line with College and the School's marking norms, the maximum mark on this assignment is 75.
- Presentation matters (worth 5% of the mark).

Questions

Research Design (50%)

1. Discuss in a few sentences why the research questions below are problematic and how they can be improved: (24%)
    a. "Do elections matter?"
    b. "Why did a genocide take place in Rwanda but not Burundi?"
    c. "Why are wars rare?"
    d. "Will Donald Trump be reelected in 2020?"
2. Write a *title* and a short (250 words or less) *literature review* on a topic of your choice. This does not need to be the topic you will choose later, and does not need to be original, but should be a plausible topic. (26%)

R syntax questions (45%). Always report the R code used, not just the result.

1. Use R to solve (2% each):

    a. $1 + 2(3 + 4)$

    b. $4^3 + 3^{2+1}$

    c. $\sqrt{(4 + 3)(2 + 1)}$

    d. $(\frac{1+2}{3+4})^2$

2. Let x_1 be the following set of observations:

$$x_1 = 3, 7, 11, 12, 18, 23$$

    a. What command would you use to add 3 to each number in x_1 (use only one command)? (2%)
    b. What command would you use to subtract 2 from each number and square the result? (2%)
    c. What command would you use to append the number 6 at the end of x1? What if you wanted to place it at the beginning instead? (2%)

3.

a. Enter the integers 1 to 100000 into a vector called "abc" (2%).

b. sample 10 random numbers from "abc" (3% points)

c. what command would you use to display the 37th number from "abc"? (2%)

4. Import the data PS1.csv provided with this assignment. This dataset includes three variables derived from the Correlates of War dataset: 'Country', 'year', and 'Battle Deaths'.
    a. What value appears in column 3, row 15 (use R code, not Excel!)? (2%)
    b. How many rows are there? (2%)
    c. How many different countries are listed in the data (2%)?
    d. Which country is the most represented in the data? (2%)
    e. Missing values in variable 'Battledeaths' are currently coded as −9. Change it to 'NA' (3%).
    f. In what year did Italy experience its largest war (as measured by the number of battle deaths) (3%)?
5. Create a *function* that prints, for a given country, the total (i.e., sum) number of battle deaths associated with that country. For example, for Italy, it should print the sentence "Italy had a total of x battle deaths", where x is Italy's total number of battle deaths. (10%)