

# Lab 1: Practice Code

Your name

## Prerequisite

```
rm(list = ls()) # Clear memory  
library(tidyverse) # Load package
```

## Vector Practice

1. **Vector1** : The numbers one through five and then the number six five times
2. **Vector2** : 10 randomly drawn numbers from a normal distribution with a mean 10 and a s.d. of 1
3. **Vector3** : Results of 10 single binomial trials with a probability of 0.4
4. **Vector4** : Sample 100 observations from a 5-trial binomial distribution with a probability of success of 0.4
5. **Vector5** : The numbers one through three and the word apple
6. What type of data is Vector2?
7. Round up Vector2 to two decimal place
8. What happened in Vector5?

## Matrices Practice

1. **Matrix1**: Create 5 by 5 matrix containing all NAs
2. Assign **Matrix1** the row names (a,b,c,d,e) and the column names (1,2,3,4,5)
3. Replace the NAs in the first column of **Matrix1** with “Inf”

## List Practice

1. Create a list that contains **Vector1**, **Vector2**, **Vector3**, and **Matrix1**
2. Name each list component as **Vector1**, **Vector2**, **Vector3**, and **Matrix1** respectively
3. Locate **Vector2** from the list

## Data Frames Practice 1

### Working directory

Check if your working directory is correct (where you have saved **Lab01Data.csv** and **Lab01Survey.csv**)

1. Load Lab1\_data.csv in R

```
# Load data in simple way
```

2. What is the data structure? What does that tell us about type?

```
# Check structure
```

3. Check the names and summary statistics of the data. Fix any names that are less than good.

```
# Check and fix names
```

4. Remove observations with missing values

5. Calculate the average GDP per capita for Brazil for the observed period. Repeat the calculation for all countries.

6. Plot GDP per capita (on the x-axis) and Polity2 (on the y-axis)

7. Create a new variable called “democracy”. Assign 0 to countries with negative value or zero polity2 score, and assign 1 to countries with positive score.

8. Export (save) the data set with the new variable “democracy” both as .csv and .rdata files