



Introduction to Data Science – Week 2 – Exercises

Before Starting

Make sure you have finished the Week 1 exercises.

Create an R Project with RStudio.

Make sure to also create a git repository when creating a new project!

Basic R Exercises

1. Understanding and Fixing Code

- Fix the part of the code that shows the cold months in Baltimore (Lecture02/02-PrimitiveTypes) so we know which are those months.
- What would happen if we still had a NA on the vector for the temperatures in SJC? (Lecture02/05-Factors)?
- What happens if we try to run `sjcTemps["Jan":"Jul",c(1,3)]`? Why? (see Lecture02/06-DataFrames).
- We can change Data Frames with `sjcTemps3["Aug",] <- c(1,2,3)` and `sjcTemps3["Jul",] <- sjcTemps3["Jul",]+c(3,4)` but we cannot change with `sjcTemps3["Jul",] <- c(3,4)`. Why? (see Lecture02/06-DataFrames).
- Run some examples that show that the recycling rule reuses the smaller (shorter) vector.
- What does `stringsAsFactors=FALSE` in `read.csv()` do? Why do we need it? (see Lecture02/06-DataFrames).

2. Baltimore Rainfall

The average monthly rainfall in Baltimore is, in inches:

3.47, 3.02, 3.93, 3.00, 3.89, 3.43, 3.85, 3.74, 3.98, 3.16, 3.12, 3.35

(<http://www.rssweather.com/climate/Maryland/Baltimore/>)

Write an R program that shows this in millimeters (one inch = 25.4 mm), add names to the vector, and calculates its average, minimum and maximum.

Send the link to the answer of Exercise 2 to the instructors (rafael.santos@inpe.br and gilberto.queiroz@inpe.br).