Week 7 Exercises

Data Hack 2022

05/13/2022

Programming and functions.

The goal of today's class is to learn about `for loop`, `if else`, `lapply` and use them in the context of importing data. You can find the messy script of today's class in GauchoSpace.

#Exercises

1) Create a function that is the quadratic formula, i.e., you input the coefficients of a quadratic function and the code returns the roots.

Something like: If you have the equation $ax^2 + bx + c = 0$, the code will give you:

$$\frac{-b + \sqrt{b^2 - 4ac}}{2a} \text{ and } \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

2) (tricky) Create a function that gives you the n-th fibonnaci number, where $n < 16$

3) (trickier) Create a function that gives you the n-th fibonnaci number.

4) Spend sometime analyzing and understanding the following function:

```
big_import <- function(full_path){
  thenames <- "enrollment_" #Just change this part if you want a different name
  if (typeof(full_path)!="character"){
    print("Wrong, argument needs to be a character")
  }
  else {
    f_listy <- list.files(full_path)
    f_listy2 = paste0(full_path,"/",f_listy)
    f_list_data <- lapply(f_listy2,read_excel)
    f_how_long <- length(f_list_data)
    for (i in 1:f_how_long) {
      assign(paste0(thenames, i+2001), as.data.frame(list_data[[i]]),envir = .GlobalEnv)
    }
  }
}
```