Prerequisites

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Required software

In this course, we will exclusively use R for data analysis. First, install the latest version of R for your system (see https://cran.r-project.org/). Then, install the latest (desktop open source) version of the RStudio integrated development environment (link).

If you have no experience with R or another programming language, you are going to need to catch up before starting the course and during the course. *This is not an introductory course on programming with R, but a course on data analysis and visualisation*.

Some good sources are: - The first two chapters of introduction to R on datacamp - Install R, play around, and read the workflow basics chapter in Hadley Wickham's R for Data Science - Interactive R course: install R as in the previous point and in the console type the following lines one by one

```r
install.packages("swirl")
library(swirl)
swirl()
```

and follow the guide to run the R Programming: The basics of programming in R interactive course.

Required R knowledge

The following is the minimum of what you should know about R before starting with the first practical

- What is R (a fancy calculator) and what is an .R file (a recipe for calculations)
- What is an R package (a set of functions you can download to use in your own code)
- How to run R code in RStudio
- What is a variable `x <- 10`
- What is a function `y <- fun(x = 10)`
- Understand what the following statements do (tip: you may run it in R line by line)

```r
y <- "Let him go!"
x <- "Bismillah!"
z <- paste(x, "No, we will not let you go.", y)
rep(z, 3)
1:10
sample(1:20, 4)
sample(1:20, 40, replace = TRUE)
z <- c(1, 2, 3, 4, 5, 4, 3, 2, 1)
z^2
z == 2
z > 2
install.packages("dplyr")
library(dplyr)
```

- Be able to read the help file of any function, (e.g., type `?plot` in the console)