Installing R and RStudio

If you are reading this, you may be interested in learning how to start programming in R. Welcome to the team!

R is a powerful programming language. It is used by data scientists all over the world. R is a text-based language. That means that you will write commands to tell R what to do, like perform calculations, run statistical analyses, plot graphs, and more.

RStudio is an interface that facilitates the use of R. It is what we call an integrated development environment (IDE) that provides many convenient features and tools. Using RStudio’s interface makes using R much easier and intuitive.

Both R and RStudio are open-source, meaning that they are (and will always be) free.

To make R and RStudio run smoothly on your computer, you need to first install R and then install RStudio.

To install R, visit the following page and follow the instructions for installing it on your computer. Remember to choose the right version for your own Operating System (OS):

To install R, go here: https://cloud.r-project.org/

Once you have installed R, you will install RStudio. Again, remember to choose the right version for your OS:

To install RStudio, go here: https://rstudio.com/products/rstudio/download/
Starting RStudio

Once you have R and RStudio installed on your computer, you are ready to go. When you open RStudio for the first time, you will see a screen that looks like this:

The messages you see in the left pane (the tab named Console) may vary, depending on the version of R and RStudio you install in your computer. They are just general welcome messages telling you the R version you have installed, or how to get other information, like license number, contributors, etc.

If you want to delete that message, simply click on the little broom on the top-right part of the Console panel:
Getting your RStudio environment ready for work

So far, you have three panes in front of you. You will want to open a fourth one, that you will use to write your codes. We will call it the “Scripting Area,” because it is where we will write our scripts (or codes) to R, and run them later.

Now you will have an environment that looks like this:
The RStudio panes

Each RStudio pane has its own function. With time you will get more familiar with them. Here is a brief description of the main four ones:

- **The Scripting Area**: is where we write our R code. You will hear people calling them “scripts,” because they are similar to scripts actors use in the theater or in the movies. Someone writes it, the actor reads it and execute them later, when they are tell to do so.

- **The Console**: is where R executes the codes. When you write your code in the scripting area and run your lines of code (we will see that later), the commands executed will appear in the Console. Error messages, if any, also show up in the Console.

- **The Global Environment**: is R’s brain. It is in the Global Environment that R stores all the variables you create when you execute your codes.

- **The Plotting Area**: when you create graphs, histograms, and other visual outputs, they will show up here.

As you see, RStudio keep together all the elements you will use during the process of creating and running the computer code, including the outputs. That makes our life much easier and the process of programming in R very friendly!
Taking a peek on the R panes

THE SCRIPTING PANES

In the scripting pane you will write your R codes to be executed later. When you later run your code, R will read the instructions in order, line by line, and execute them.

Anything we write in the scripting area remains there until we tell R to do something with it. Below is an example of an R code written in the scripting area:
Running an R code

You can execute the other lines, one at a time, and see the variables being created in the Global Environment:

The Global Environment shows the variables created.

The Console shows the executed lines.

When you run a line that creates an output (like a graph), this output will show up in the Plotting Area:
Saving your R code

You will want to save your R code to be used later. You can also share your code with colleagues, or provide them as templates for other people. The possibilities are endless. To save your code, click on “File” and then “Save As”.

You will see that the little tab on the top left of the Scripting Area now shows the name of your code:

Ta-Da! We are now ready to start using RStudio to code in R!