

R bootcamp - part 1: installing software

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1 Welcome!

Welcome to the R course: Introduction to Data Visualization in R! The following document contains a checklist of things to do **before** the course starts. They are a requirement to participate in the course - if you run into any issues with the installation, let us know!

2 Install R and R studio desktop

If you use a Mac and use **brew** for managing your software, please do:

```
brew install r  
brew install --cask rstudio
```

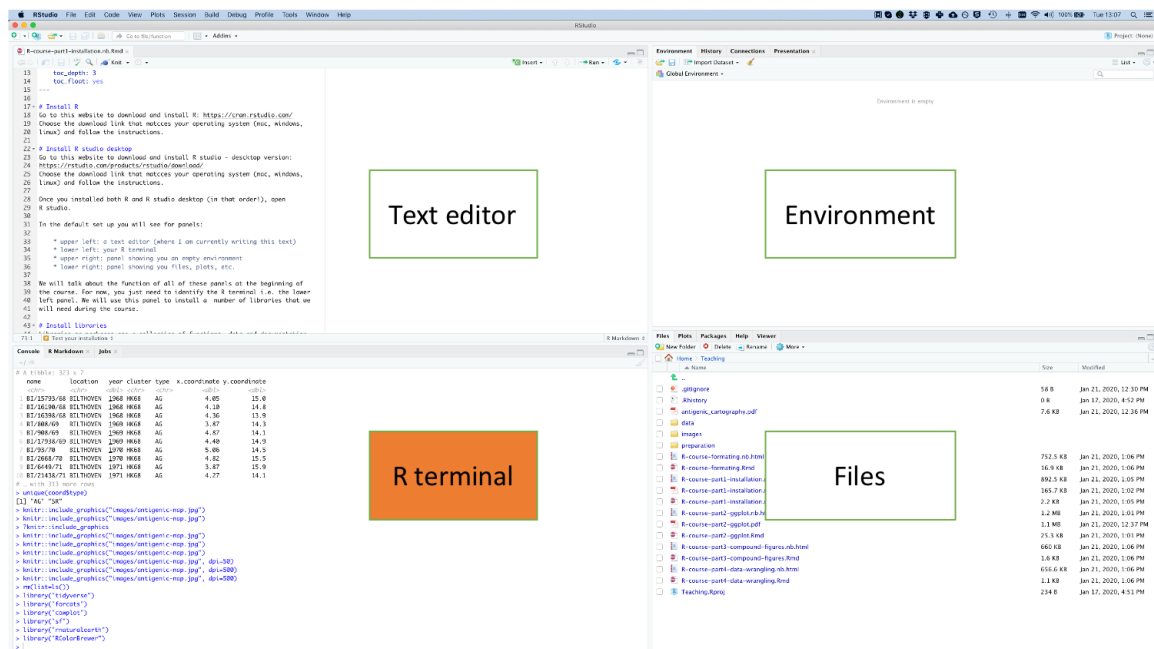
If you are on a different operating system or you do not use **brew**, please go to this website to download and install R: <https://cran.rstudio.com/>. Choose the download link that matches your operating system (mac, windows, linux) and follow the instructions.

Then, go to this website to download and install R studio - desktop version: <https://rstudio.com/products/rstudio/download/>. Choose the download link that matches your operating system (mac, windows, linux) and follow the instructions.

Once you installed both R and R studio desktop (in that order!), open R studio.

In the default set up, you will see four panels (see figure below):

- * upper left: a text editor (where I am currently writing this text)
- * lower left: your R terminal
- * upper right: panel showing you an empty environment
- * lower right: panel showing you files, plots, etc.



We will talk about the function of all of these panels at the beginning of the course. For now, you just need to identify the R terminal i.e. the lower left panel. We will use this panel to install a number of libraries that we will need during the course.

3 Install libraries

Libraries or packages are a collection of functions, data and documentation for a specific task, for instance plotting or simulation. However, the initial R install only comes with a very basic set of libraries. Any additional packages that we want to use have to be installed first.

Copy the following lines into your R terminal (lower left panel) and press enter. You should see a lot of text being printed to the terminal, while R installs these packages.

Note: If prompted to select if packages should be compiled from source, please enter 'no'.

```
install.packages("tidyverse")
install.packages("forcats")
install.packages("cowplot")
install.packages("sf")
install.packages("rnatruralearth")
install.packages("RColorBrewer")
```

4 Test your installation

In the following section, we will test if the installation of the packages was successful. Do not worry if you do not understand the following commands yet, we will discuss them during the course. For now, we just want to make sure we can get started with the right set up on the day of the course.

Please copy the following lines into your terminal and hit enter:

```
library("tidyverse")
library("forcats")
```

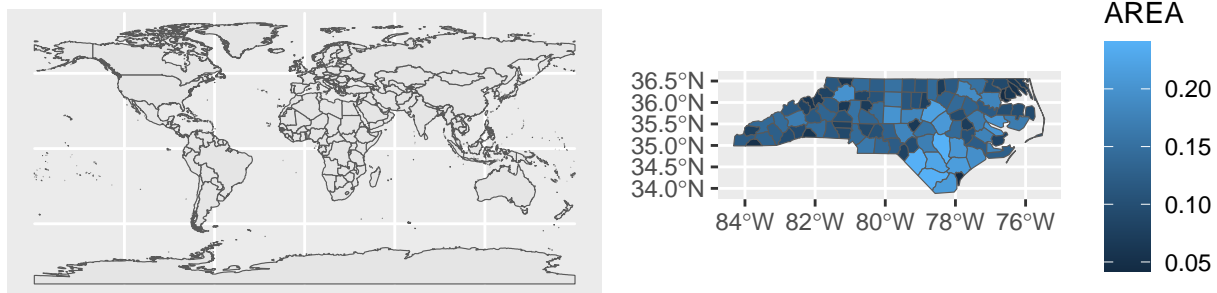
```
library("cowplot")
library("sf")
library("rnaturalearth")
library("RColorBrewer")

world <- ne_countries(scale = "medium", returnclass = "sf")
left <- ggplot() + geom_sf(data = world)

nc <- sf::st_read(system.file("shape/nc.shp", package = "sf"), quiet = TRUE)
right <- ggplot(nc) + geom_sf(aes(fill = AREA))
```

Please copy these two lines now. If everything worked out, you should see the following output in your plots window (lower right) and terminal (lower left)

```
plot_grid(left, right)
```



```
head(RColorBrewer::brewer.pal.info)
```

```
##      maxcolors category colorblind
## BrBG         11      div      TRUE
## PiYG         11      div      TRUE
## PRGn         11      div      TRUE
## PuOr         11      div      TRUE
## RdBu         11      div      TRUE
## RdGy         11      div     FALSE
```

Please make sure that you see the same output as above. If you run into problems, please reach out and we can try and help set it up before the class. We expect everyone to come with all requirements installed and will not help with the setup during class, so please be prepared and ask in advance!