

# STA 100 R Handout: installing R and RStudio, and reading .csv or .txt files.

## 1 Installing R

One of the wonderful things about R is that it is free. This way, you may work on your homework in the comfort of your home.

To download and install R, complete the following steps:

1. Go to <http://cran.freeststatistics.org/>
2. If you have Linux, click “Download R for Linux” and select the appropriate platform.
3. If you have a Mac, click “Download R for (Mac) OS X”, and select the appropriate package based on your operating system.
4. Follow the installers instructions.

Congratulations, you have now (hopefully) installed R.

## 2 Installing RStudio

While it is technically true that you may stop at the above step and only use R, I highly recommend installing the user interface Rstudio.

To install RStudio, complete the following steps:

1. Go to <http://rstudio.org/>
2. Click on the “Download RStudio” button.
3. Select the “Desktop” option.
4. Select the appropriate link (usually the recommended for your system works just fine).

If you use a chromebook or are not familiar with the installation process, I highly recommend to use R Studio Cloud: <https://rstudio.cloud/> RStudio Cloud allows anyone to use R and RStudio online without any installation. You can create a free account.

## 3 Configuring RStudio

You should now have an icon on your desktop for RStudio. If you run the program, it will automatically open R as well, and you should have 4 panels. To configure the panels in the same setup that I will have in class, go to

Tools → Global Options → Pane Layout

and select the “Environment, History, Build, VCS” for the upper left corner, “Files, Plots, Packages, Help” for the upper right, “Console” for the lower left, and “Source” for the lower right.

A brief description of the four windows follows:

- Environment, History, Build, VCS: This window lists the following:

Data: All datasets entered, with their name, type, and dimensions (these are typically data frames). For example, a data frame consisting of 3 columns, or a matrix consisting of 3 columns would be listed here.

Values: All vectors, or single value objects, along with their name and type. For example, a vector of numerics, a single numeric value, or lists(to be discussed later) of values would be listed here.

Functions: All **user entered** functions, with their name and the parameters they expect to use as input would be listed here.

- Files, Plots, Packages, Help: Should you use the help command (the ?) in R, the relevant help document will be opened here.

Should you plot a figure, the relevant figure will be displayed.

You may look at what packages you have loaded (this may be beyond the scope of this class).

- Console: Where you type in your commands and retrieve your output.
- Source: A convenient place to store your commands, which can then be sent to the console via keyboard shortcuts or with a button. I **highly** recommend putting all of your code in the source window, and transferring it to the console.

#### 4 Loading .csv or .txt files into R

To load a file, such as a .csv, .txt, etc. into R using the drop down menu in RStudio. For example, if for my homework I had a file called “offers.txt” which contained two columns, one for the amount of cash offered in hundreds of dollars and one for the age group of the person, I could read this into R in the following manner: Click on: Tools → Import Dataset → From Text File...

Here you can select if you have a header, the name of the dataset you are reading in (it defaults to the name of the .txt file), and preview how the data was read in to make sure that R has formatted it correctly.

Select “Import”, and in the console window you will see the command used to read in the data, and see that it has been assigned an object in R with the appropriate name (mine is “offers”).

If you do not have any header, R automatically renames the columns as V1, V2 .... We will see how to change these names later on.

**I encourage you to copy the command to read in the data from R into the source code window, so you may simply run the command to get the data into R (without having to point and click).**