

Setting up R and R Studio

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Goals of this lesson

This lesson will provide information on how to

1. Install R – *The programming language*
2. Install R Studio – *A fantastic interface for coding in R*
3. Basics of Navigating R Studio
4. Set up preferences – *To avoid common mistakes and pitfalls*
5. Install Packages – *Adds functionality to R*

Installing R & R Studio

Download the latest versions of R and R Studio for your flavor of operating system.

- [R](#)
 - Install Options:
 - * Don't use a personal library
 - * Don't create shortcuts on desktop or startup menu
- [R Studio](#)

If you are having difficulty installing these programs here are links to helpful YouTube video on installing both R and R Studio.

- [Mac Instructions](#)
- [Windows Instructions](#)

Layout of R Studio

- The panel in the upper right contains your *workspace* (Environment) as well as a history of the commands that you've previously entered.
- Any plots that you generate will show up in the panel in the lower right corner.
- There are multiple tabs down there such as your file explorer, and the help files.
- The panel on the left is the *console* and it's where the action happens.

The Console

- Everytime you launch RStudio, it will have the same text at the top of the console telling you the version of R that you're running.
- Below that information is the *prompt*, `>` . As its name suggests, this prompt is really a request, a request for a command.

- Initially, interacting with R is all about typing commands and interpreting the output.
- These commands and their syntax have evolved over decades (literally) and now provide what many users feel is a fairly natural way to access data and organize, describe, and invoke statistical computations.

Initial Setup

To avoid some of the most common errors when learning R let's set some preferences in RStudio.

1. On your computer, create a folder called **RBootcamp**. Store all files associated with this class here.
2. In RStudio the file menu go to *Tools* then *Global Options*.
3. Select your **RBootcamp** folder as your default working directory by clicking [Browse.] and navigating to your **RBootcamp** folder.
4. Uncheck "Restore .RData into workspace at startup" and "Always save history"
5. Where it says "Save workspace to .RData on exit:" Select 'Never'
6. Check "Remove duplicate entries in history"
7. Click *apply* then *ok*.

Installing Packages

- Packages are sets of predefined code, functions and data sets. They provide additional functionality and goodies beyond what is included when you download Base R.
- Packages are only installed once per computer ever
- During this course you will be asked to complete several interactive tutorials that use code found in the **swirl** package.
- To install the Swirl package type the following command at the prompt `>` and hit enter to submit the command.

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

- Install the following packages, remembering R is case sensitive: **ggplot2**, **mail**, **dplyr**, **knitr**, **nycflights13** and **hflights**.

```
install.packages(c("ggplot2", "mail", "dplyr", "knitr", "nycflights13", "hflights"))
```

Downloading Swirl lessons

- The **swirl** package and it's fantastic tutorials were created by the folks at <http://swirlstats.com/>. All of their work is free to use and modify under the GPLv3 copyright license.
- I have spliced and diced most of their prebuilt lessons to fit this class. My thanks to them for doing all the hard work.
- Download the [zipped file](#) and place it into your **RBootcamp** folder. Do not unzip it.
 - **MAC USERS - RIGHT CLICK THE LINK AND SELECT SAVE LINK AS**
- Leave a window open to this folder. You will need to know the path to this zip file next.

Finding your path on a Mac

1. Select the file or folder in the OS X Finder, then hit Command+i to summon Get Info
2. Get Info can also be accessed by the control-click and right-click menus.
3. Click and drag alongside “Where” to select the path, then hit Command+C to copy the full path to the clipboard
4. Paste this into R for your path.
5. Make sure all slashes are forward slashes /.

Mac Reference link: <http://bit.ly/1Nx9eu>

Finding your path on Windows

1. Open Windows Explorer and browse to the folder or file of your choice.
2. The path to the folder/file will be indicated in the Address bar of Windows Explorer.
3. To copy it, simply right-click on the Address bar and select *Copy address as text*.
4. Paste this into R for your path.
5. Make sure all slashes are forward slashes /.

Windows Reference link: <http://bit.ly/1NxFeir>

Installing Swirl lessons

The functions used to install the custom lessons are contained within the `swirl` package. In the R console window type:

```
library(swirl)
install_course_zip("YOUR PATH HERE/swirl_lessons.zip")
```

- You must change `YOUR PATH HERE` to the path to where your RBootcamp folder is located.
- Only change the `PATH`.
- Be sure all slashes are forward /
- You will FREQUENTLY have to insert this `PATH`, so if you have any questions **NOW** is the time to ask!

Using Swirl

- You'll learn how to use Swirl in [Lab 1!](#)
- It is **highly** recommended that you save a copy of every lab in your RBootcamp folder for later reference.
- Don't forget to use the [Google Group](#) to ask questions if you get stuck.
 - Tag your posts with `#Rbootcamp` so it's easy to find!