Install R & RStudio, and the tidyverse

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The step-by-step instructions in this document are to help you get R/RStudio on your own computer.

Note: If you have older versions of R/RStudio installed, I highly recommend updating. To get the updated version of R, follow the instructions below to get Version 4.0.2. To update RStudio, you can follow the instructions below OR go to the 'Help' tab in RStudio, click on "Check for Updates," then choose "Quit and Download" if you're running an older version, then follow instructions below to download the newest version.* ***The versions I'll be using are:*

> *R: Version 4.0.2 -- "Taking Off Again" (released 2020-06-22)*
> *RStudio: Version 1.3.1056*

NOTE: If your computer does NOT support R and/or RStudio, you should contact our Bren Compute Team (request@bren.ucsb.edu) to get set up with an RStudio Server account.

STEP 1. GET R (FREE!)

You can visit https://www.r-project.org/ to learn a little about R. You'll see in the first paragraph some active links to download R, but first you'll need to choose a CRAN (**C**omprehensive **R** **A**rchive **N**etwork) mirror. You can think of a CRAN mirror as a local grocery store for all-things-R, which is part of a bigger store chain.

a. Choose your preferred CRAN Mirror (I recommend Oregon State University, but it doesn't really matter - pick one close-ish to where you are in the world) by clicking on the CRAN mirror's link HERE.

b. Once you select your CRAN Mirror, you'll be redirected to the R download page. Choose the correct option for your operating system (probably either Download R for (Mac) OS X or Download R for Windows).

- For Mac users, click on R-4.0.2.pkg under the 'Latest Releases'. Install as usual.
- For PC users, choose "Install R for the first time" (next to the *base* subdirectory) and then "Download R 3.6.1 for Windows". Install as usual.

c. Once downloaded, save, open once downloaded, agree to license, and install like you would any other software. If it installs, you should be able to find the R icon in your applications:

STEP 2. GET RSTUDIO (ALSO FREE!)

RStudio is a user-friendly interface for working with R. That means you **must have R already installed** for RStudio to work. Make sure you've successfully installed R in Step 1 before getting RStudio. Then…

a. Go to https://www.rstudio.com/products/rstudio/download/ to download **RStudio Desktop** (Open Source License). You'll know you're clicking the right one because it says "FREE" right above the download button.

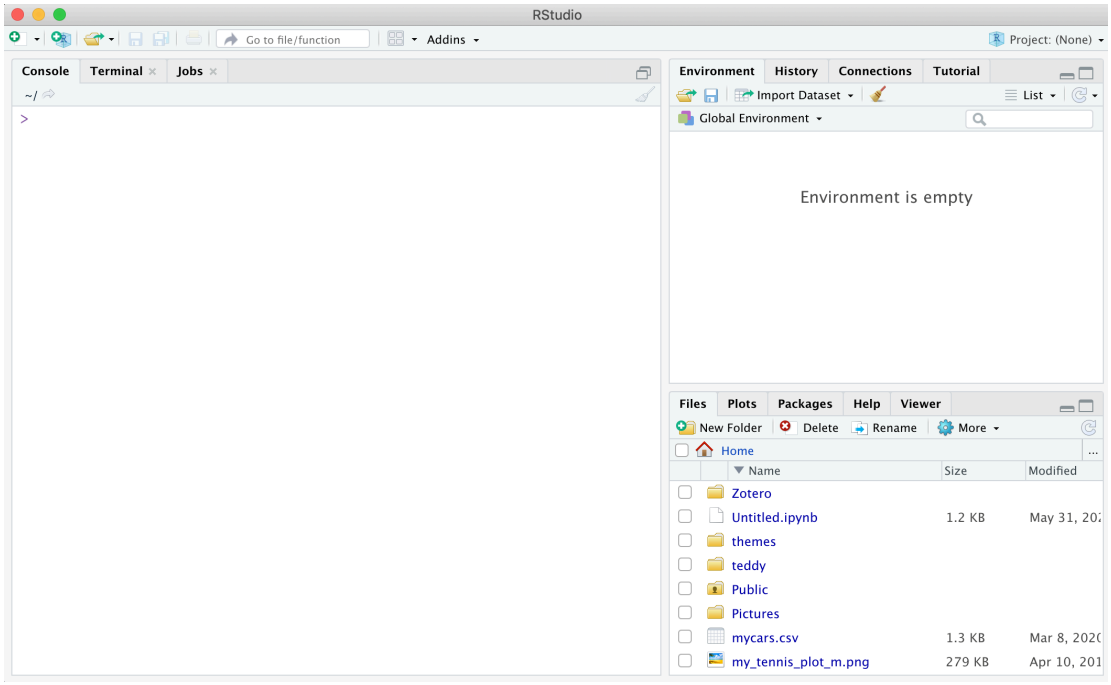
b. Click download, which takes you just down the page to where you can select the correct version under **Installers for Supported Platforms** (almost everyone will choose one of the first two options, RStudio for Windows or Mac OS X).

c. Click on the correct installer version, save, open once downloaded, agree to license and install like you would any other software:

STEP 3. OPEN RSTUDIO AND MAKE SURE THINGS ARE WORKING

a. Once you have R then RStudio installed, you can find and click on the RStudio icon to open. **When you open RStudio, it automatically also runs R. So even though you'll be using both, you only need to actively open RStudio.** You will **probably never open R on its own again.** The RStudio icon looks like this:

b. When you open RStudio, you should get a workspace that looks something like the screen shot below. There might be information about the R & RStudio version in the Console tab - that's fine. Does this environment show up? If yes, you have R and RStudio installed correctly.



Congratulations! You have R & RStudio installed successfully.

STEP 4. INSTALL the TIDYVERSE PACKAGE

When you install R, it comes with a bunch of built-in tools that are automatically installed with it. There also exist additional tools and packages that are *not* automatically included when you install R, but will make your life much easier.

Here, you'll install the {tidyverse} **R package**, which contains a bunch of functions and data that we will use frequently. Note: you only need to install packages once (not every time you start something new in R - the packages get saved).

Install the *tidyverse* package

a. If it's not open already, open RStudio (remember: you do not need to separately open R. When you open RStudio, it automatically brings R along with it)

b. Click in the **Console** tab of RStudio (you might already be there), you should see a > symbol with an active cursor.

c. To install the tidyverse, **type** the following (exactly) - do not copy and paste, as the quotations here might not translate correctly - where that cursor is waiting in the Console, then press Enter:

```
install.packages("tidyverse")
```

d. After you press Enter, you should see a whole bunch of text starting to appear in the Console Window. That's good – it's just a record of what's being downloaded/installed. This process can go on for a few minutes (the tidyverse has a lot of different components).

You will know it's done when you get something like this (yours will differ slightly), with no red error messages, and the active cursor shows up again waiting for your next command:

```
The downloaded binary packages are in
        /var/folders/37/6n_mwlq12k5gtgb_pm_nhpn80000gp/T//
RtmpbG535d/downloaded_packages
>
```

e. Once it's installed, you can ensure that everything worked out by *loading* the tidyverse package (that just means that it's bringing the package into R's active brain, instead of just existing in a dormant phase). To load the tidyverse package you've just installed, type the following into the console where the active cursor is waiting, then press 'Enter':

```
library(tidyverse)
```

When you press enter, some information will come up below the command (this might also take a minute or two to load). It should look something like this:

```
> library(tidyverse)
── Attaching packages ─────────────── tidyverse 1.3.0 ──
✓ ggplot2 3.3.2     ✓ purrr   0.3.4
✓ tibble  3.0.3     ✓ dplyr   1.0.0
✓ tidyr   1.1.0     ✓ stringr 1.4.0
✓ readr   1.3.1     ✓ forcats 0.5.0
── Conflicts ──────────────────── tidyverse_conflicts() ──
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
```

If you got something similar with no error messages (different from the 'Conflicts' section – that's fine, as we'll also learn later) then you've successfully installed R, RStudio, *and* have the tidyverse package loaded. **Congratulations!**

Problems or questions? Post / share to the course Slack workspace's #code-help channel!