Installing & Running R

Overview

In this activity we will

1. Install R
2. Install RStudio
3. Try some R code!

Install R

Installing R is easy! And free! You can also use these steps to update R.

1. Head to http://cran.r-project.org/
2. Click on the link for ***Windows***, ***Mac (OSX)***, or ***Linux***.
   [If you are running Windows using Boot Camp or Parallels on a Mac, choose Windows]
3. Click on the ***R Base*** or ***install R for the first time*** link (they go to the same place).
4. Click the ***Download R 3.x.x for [OS]*** link.
5. Run the installer, accept permissions, choose English, and press OK.
6. Hit ***Next*** through all of the defaults, then ***Finish*** when it appears.

Unfortunately, R's basic interface (while efficient) is not the easiest to work with. So let's also install RStudio, a popular user interface for R. It doesn't really matter if you run the 32 or 64 bit version (32 bit will always work).

Install RStudio

Installing RStudio is also easy and free.

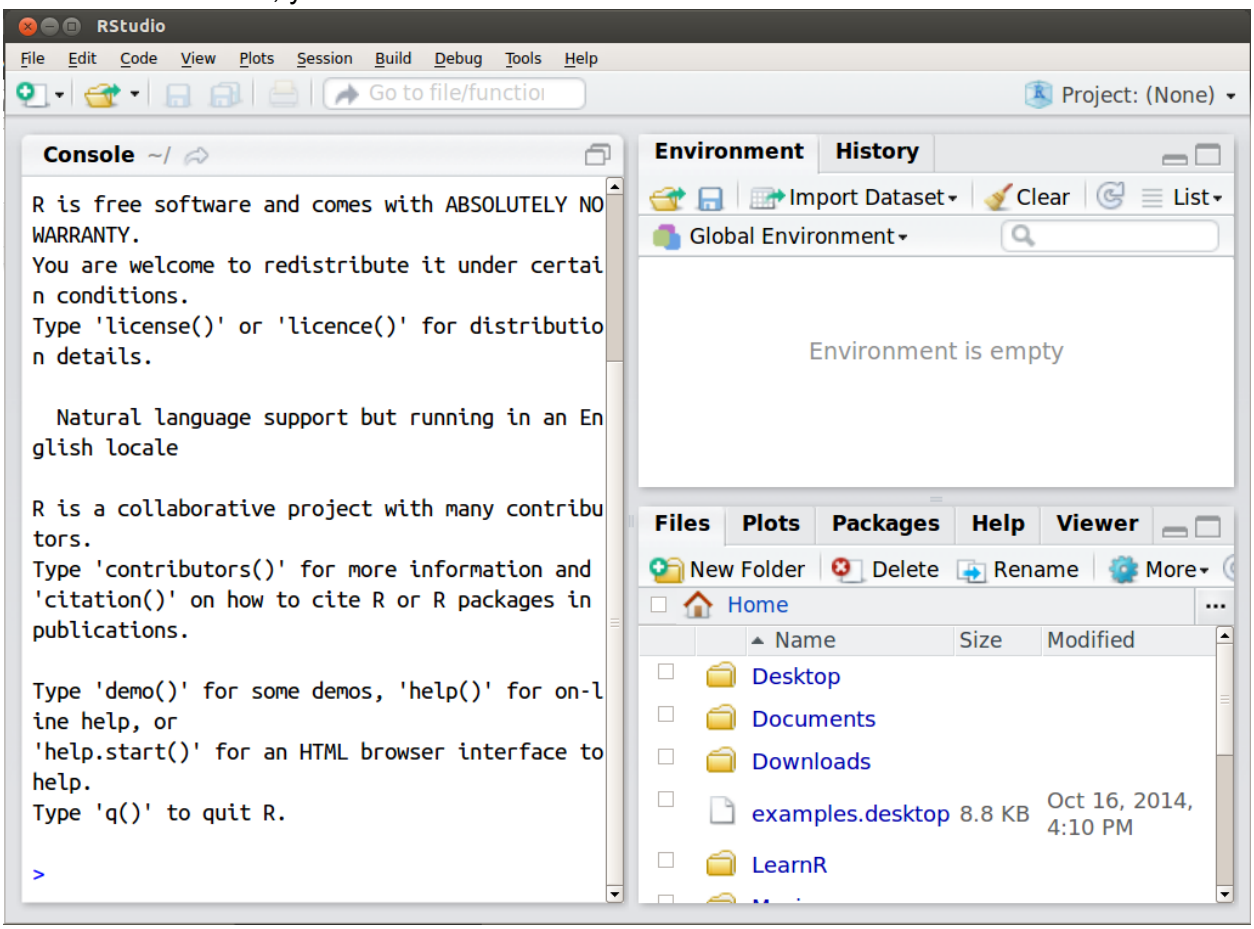
1. Download the installer from http://www.rstudio.com/products/rstudio/download/
2. Click the green box for **Download** under ***RStudio Desktop (Free License)***.
3. Click the appropriate ***Windows***, ***Mac OSX***, or ***Linux*** link under ***Installers***
4. Run the installer, accept permissions and defaults, then hit ***Finish*** then it appears.

Run RStudio

RStudio (and any other interface you use) will run R in the background for you. No need to run R yourself!

1. Double-click the RStudio icon.

When RStudio starts, you'll see three windows:



Console - This window is the connection to the R session. You can see the things that have been fed into R as well as the things R has spit out.

Environment/History - This handy viewer shows the objects in the computer's memory that we are working with. Currently, there is nothing here. But when we define things later, we'll see some stuff pop up. You can double-click on anything here for more information.

Files/Plot/Packages/Help/Viewer - This window shows other important output from R. It's nice but occasionally you'll get an error if you drag this too small and try to create a plot that doesn't fit. You'll see "Warning: Plot Margins too small!".If this happens, just drag the borders to make this area larger and run the plot again.

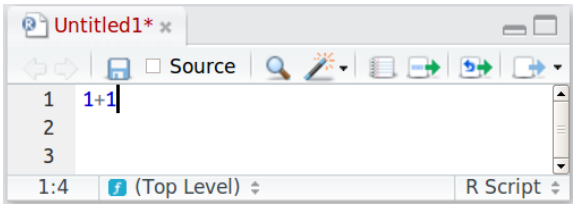
Running R Code

You can type commands directly into the console window and press enter to run them, but this is not recommended because your code will disappear afterwards. You'd waste a lot of time this way, but it's nice to always be able to type in quick calculations here in a pinch! A better approach is to create a script file to hold your main program code.

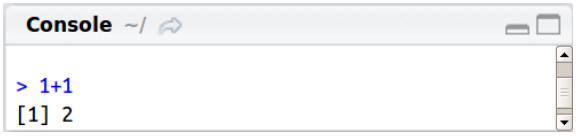
2. Select File > New File > R Script

3. Click in the script window (currently labeled ("Untitled1*) and type some text, i.e.

```
1+1
```



4. With your cursor on the same line, hold the Ctrl key and press the Enter key.



You should see the text you entered appear in the console, as well as the answer. In front of the answer will be a strange symbol: [1]. This just indicates the *index* of your answer. Since we're using R as a graphing calculator, we're only expecting one result. Thus the one: R is saying you have one result, and this is the first result. R can give you multiple things, indexed by numbers in brackets. We'll try this out next time.

5. If you're feeling brave try entering some of the math expressions below (each on their own line) and running them.

```
2*(3+8^2)
log(10)
exp(2)
sin(pi/2) + cos(pi)
sum(1,2,3)
demo(graphics)
```