Installation and Introduction to Rstudio
Developed by Stacy Calhoun

Downloading R and Rstudio
**Note: R must be downloaded before Rstudio.
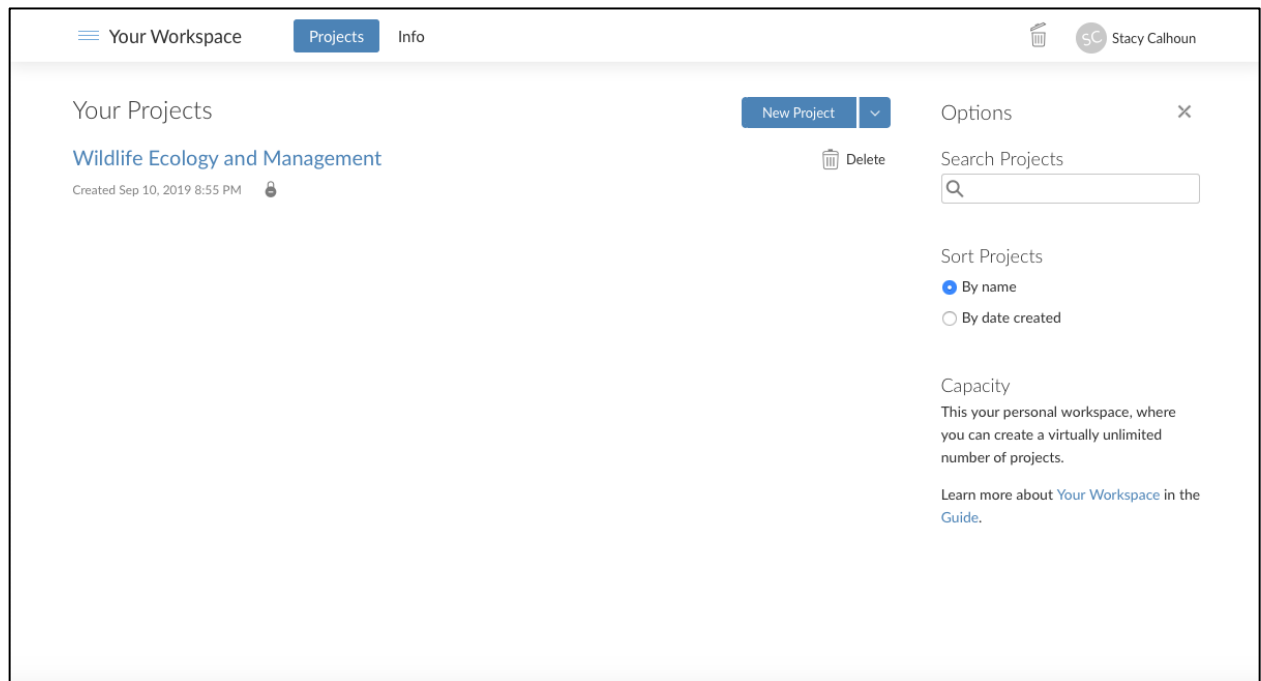Make sure you select the correct download for your operating system!

- Link for downloading R
    - https://cloud.r-project.org

- Link for downloading Rstudio
  Rstudio is a user-friendly interface for coding in R.
  *Make sure you are downloading the free desktop version
    - https://rstudio.com/products/rstudio/

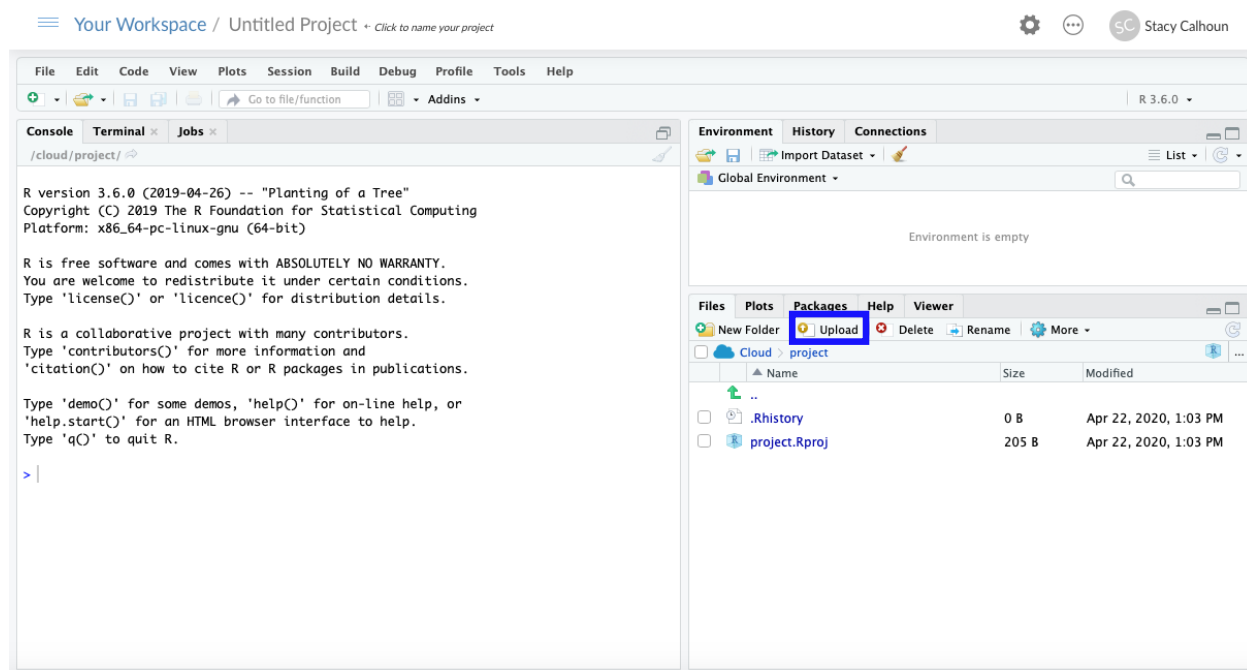**Option for students without laptops but access to campus computers
Rstudio Cloud has the same interface as Rstudio but works through a web browser. The student will have to create an account and a project to get to the Rstudio interface.
- Link to RStudio Cloud
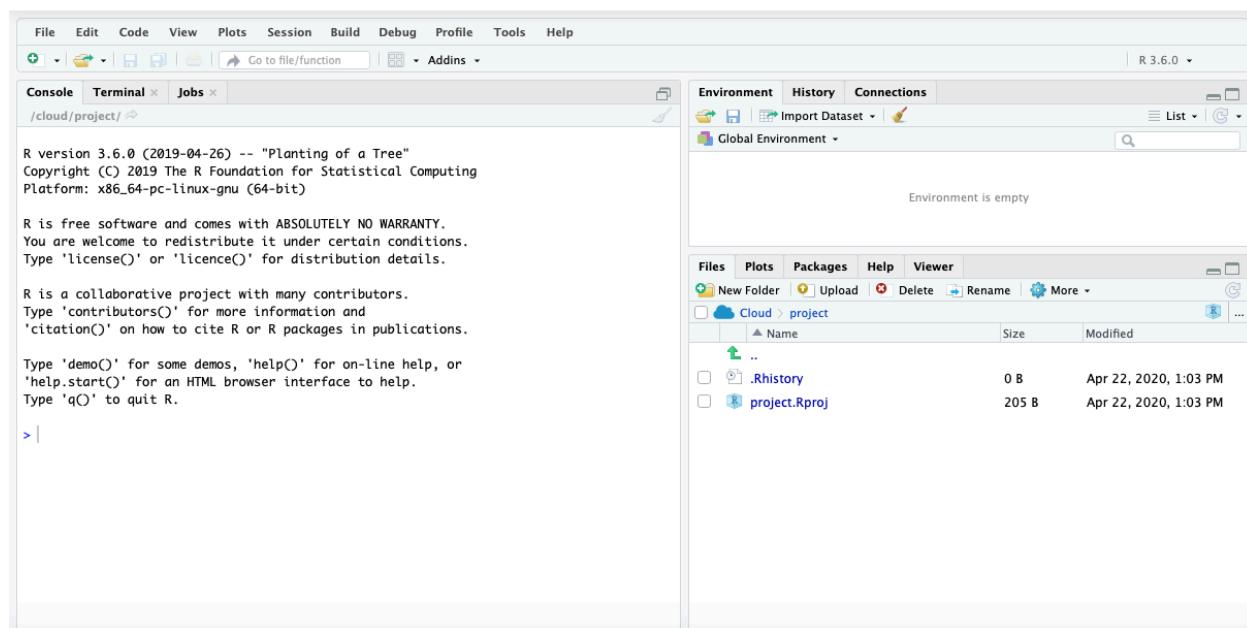   - https://rstudio.cloud

Dashboard of Rstudio Cloud

Interface in Rstudio Cloud after a new project has been created

**Because this is cloud based, files need to be uploaded in order to be read into R. Use the 'Upload' button (blue rectangle in above image) in the bottom right pane to upload the required files. This will then become your working directory for this project.

Opening Rstudio
Once installed, open Rstudio by clicking on the Rstudio icon. The window that opens will look like this:
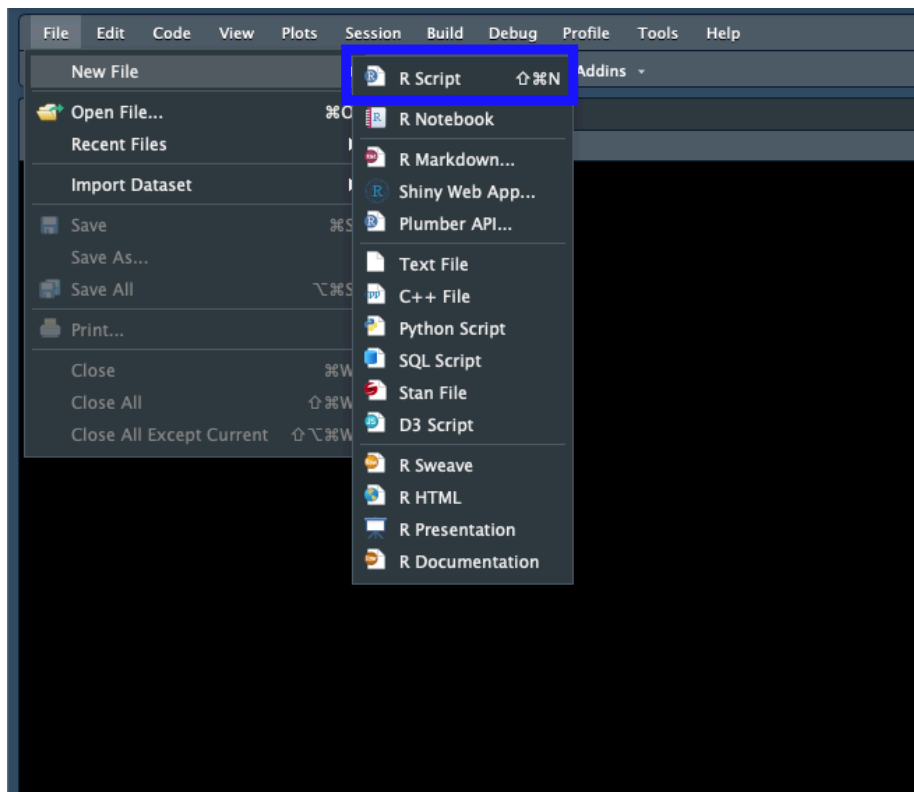

Developed by S. Calhoun

Notice that there are only 3 panes in the window when you first open Rstudio. The left pane is the console which is the window you will see if you open R on its own. Any code typed in this window will run once the enter key has been pressed and will not be saved as part of a script. The top right pane shows you the environment which will list any dataframes, lists, or other objects you create or read in to Rstudio. The bottom right pane will display folders on your computer and allows you to set the working directory without explicit lines of code. It also houses the tab where any plots that are created will be displayed, a list of packages that will be checked if currently loaded, the Help tab which will provide descriptions of functions and commands.
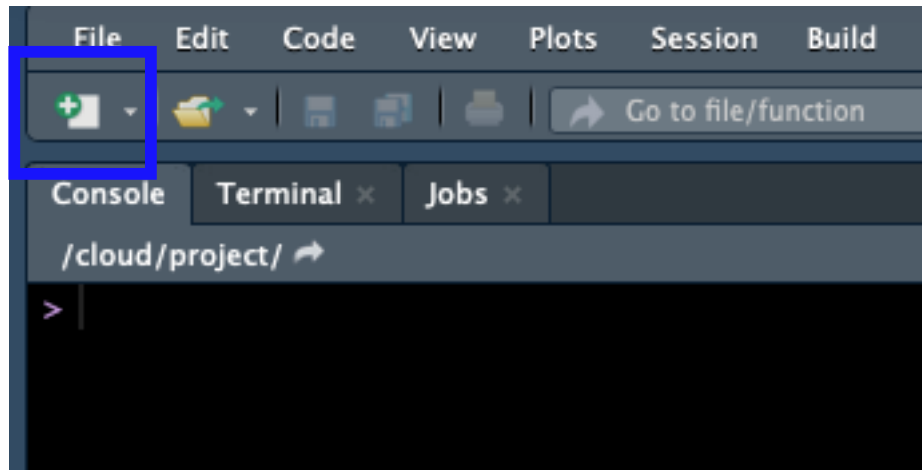
The following screenshots will be taken from an Rstudio window that has had the theme changed to a dark mode-style to make the menus and buttons easier to see. There will be instructions for how to change the theme for your Rstudio window in the following section.

To use the code editor tab, you need to select "R Script" from the File>New menu or click on the white square with a green circled plus sign in the top right corner immediately under "File" in the menu bar.
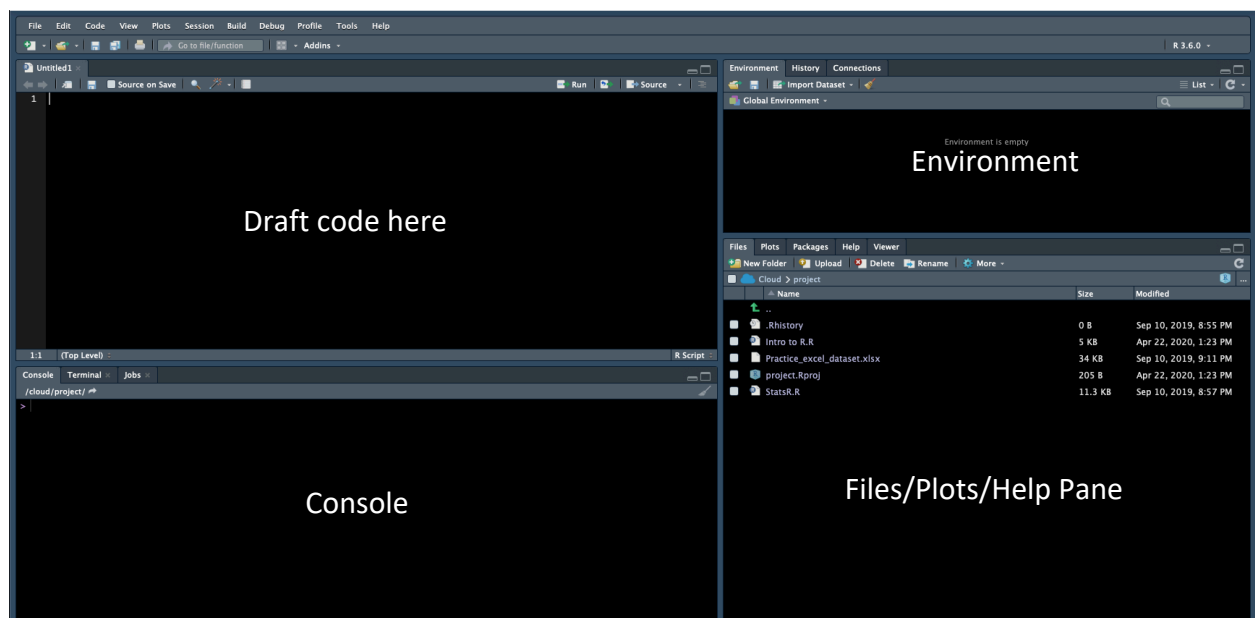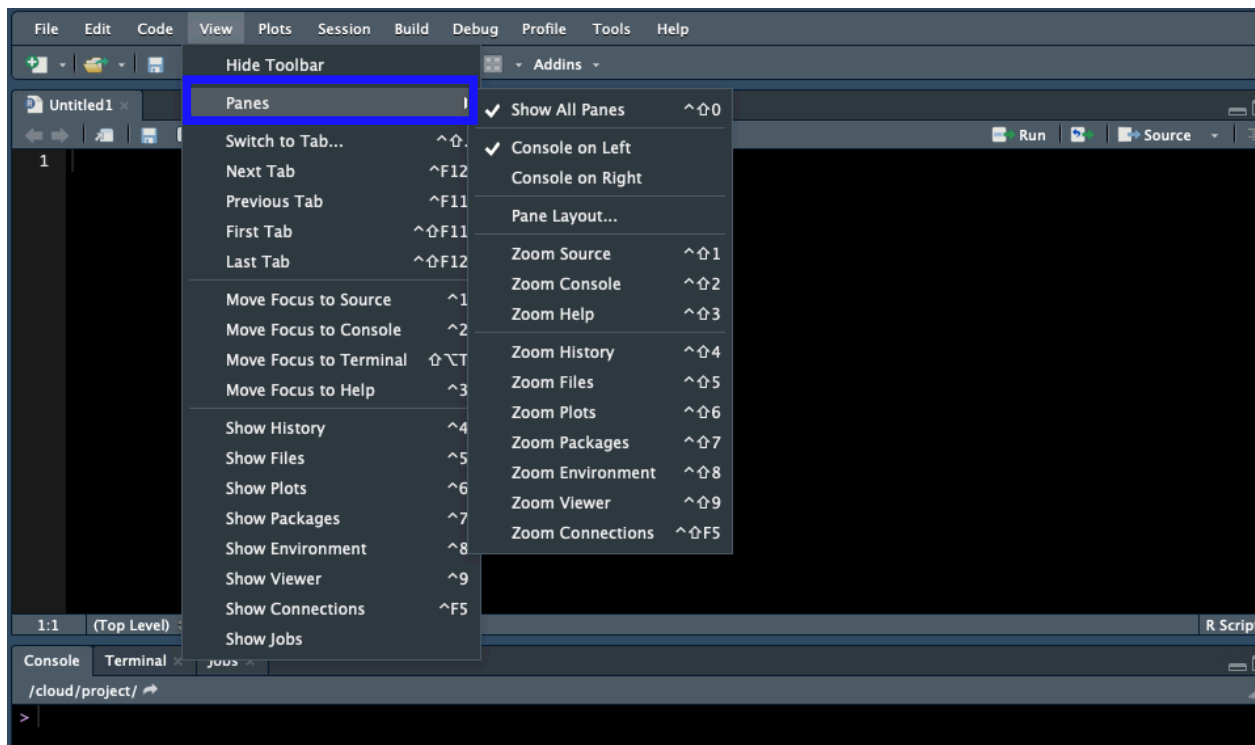
File Menu method:

Developed by S. Calhoun

'New' button Method:

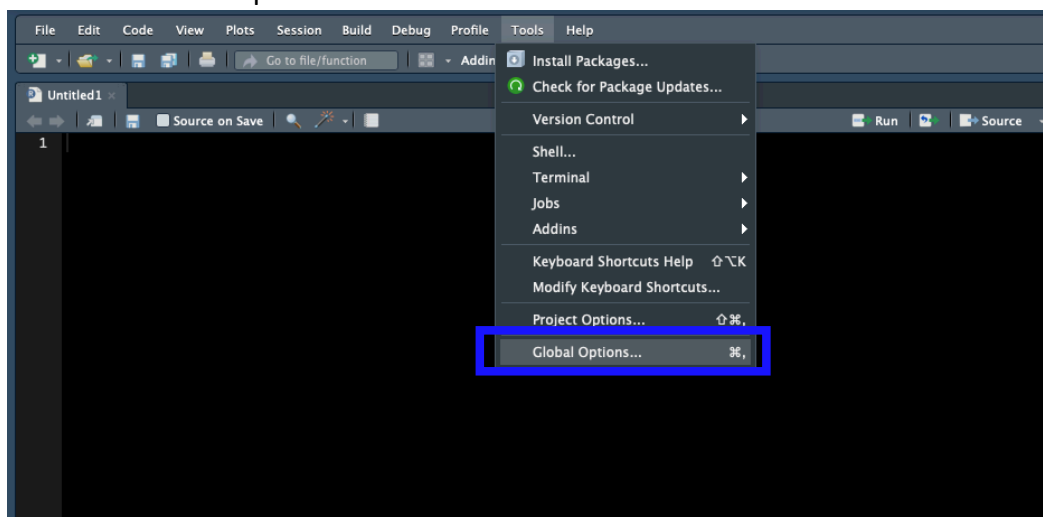Afterward, your Rstudio screen will look like this:

Developed by S. Calhoun

If you want your panes setup differently, those options can be found under the "View" tab on the menu bar, then select "Panes."
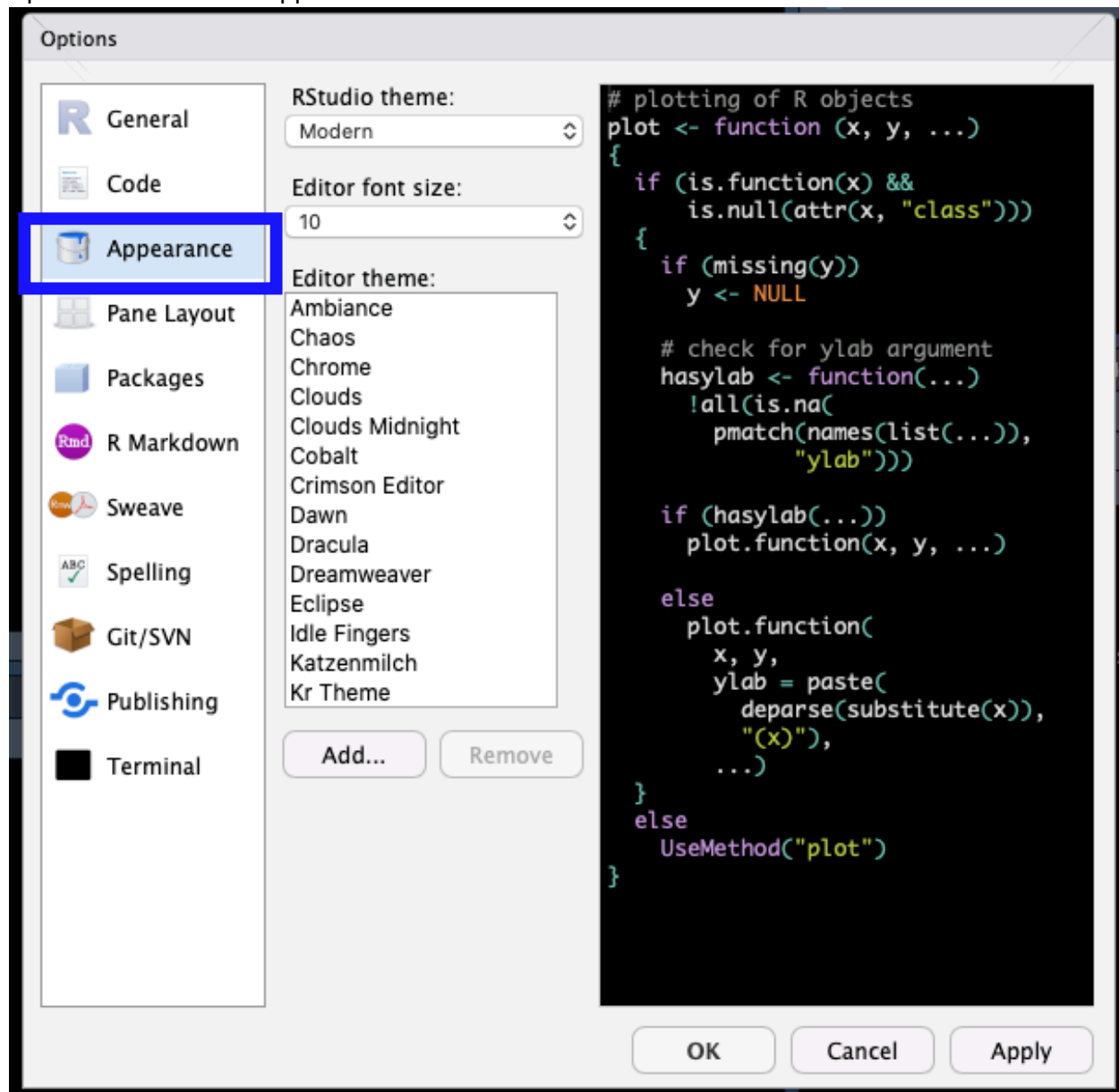

Changing the theme

Many people prefer to change the theme in Rstudio to a dark mode-style theme. To change the theme, go to the "Tools" tab on the menu bar, and select "Global Options." An Options window will open up. Select "Appearance" from the menu on the left and a list of themes will be displays with a sample of how each theme will look.

Tools tab>Global Options

Developed by S. Calhoun
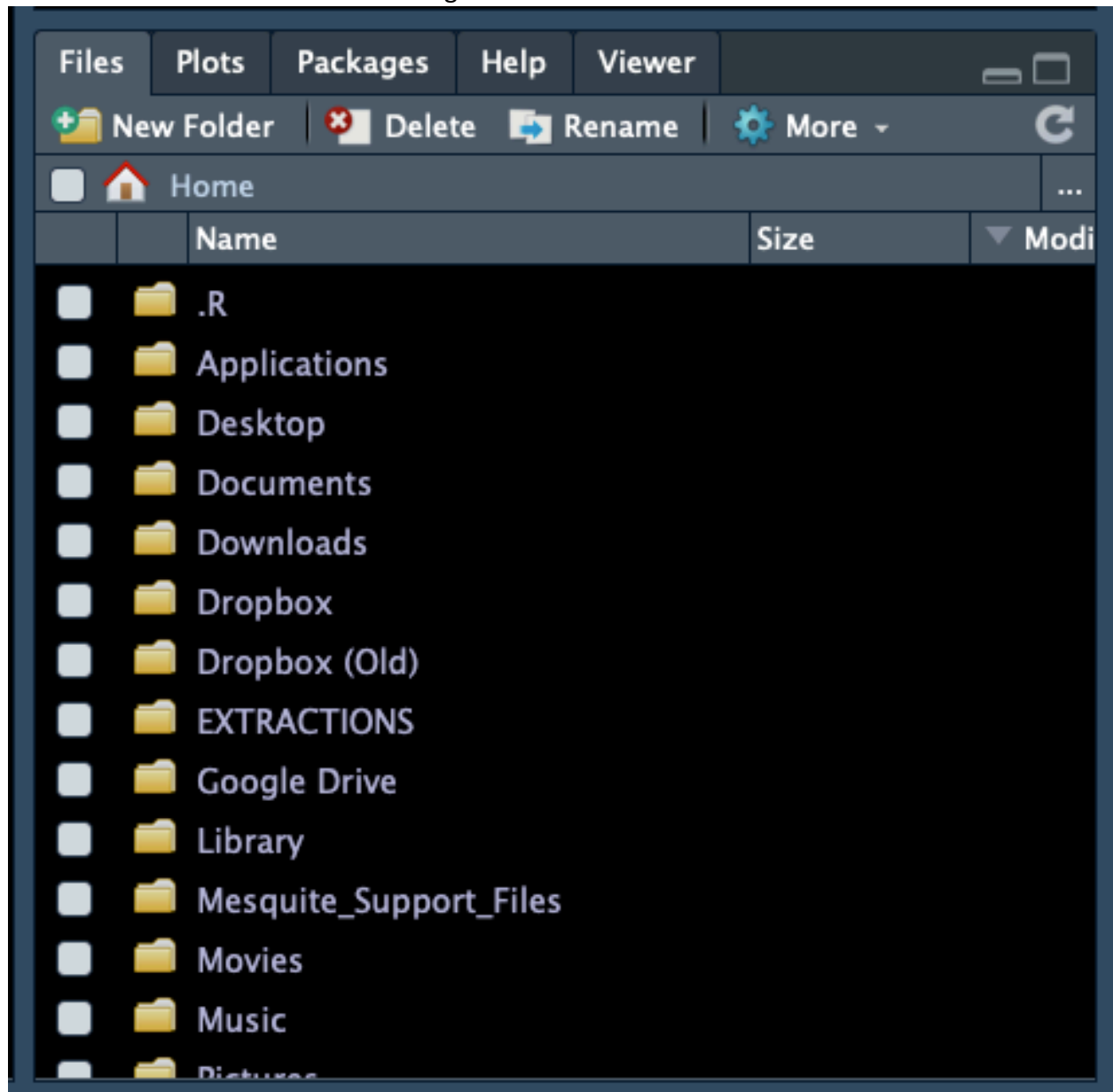
Options window with Appearance tab selected
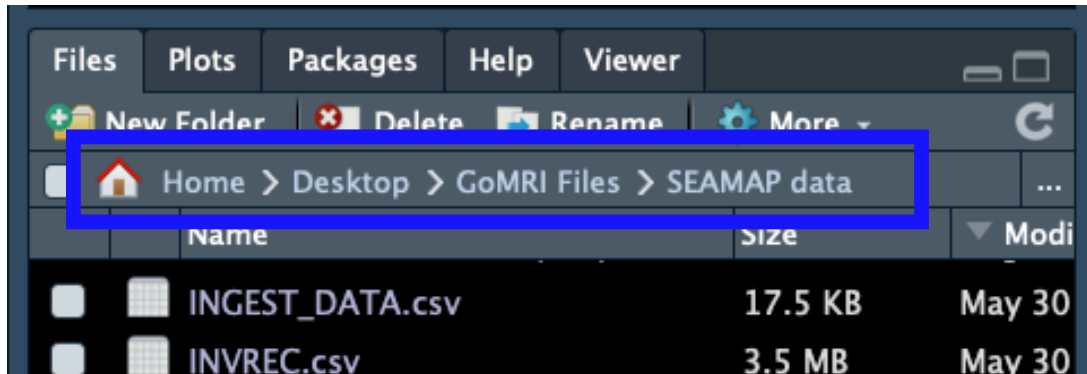
Rstudio Shortcuts

Setting working directory

Your working directory is essentially the folder that you have designated as the folder Rstudio should use to read in files or save files within. You can navigate to the folder you would like to use in the "Files" tab in the bottom right pane. Select the appropriate folders until you've reached the folder you want to use as your working directory.
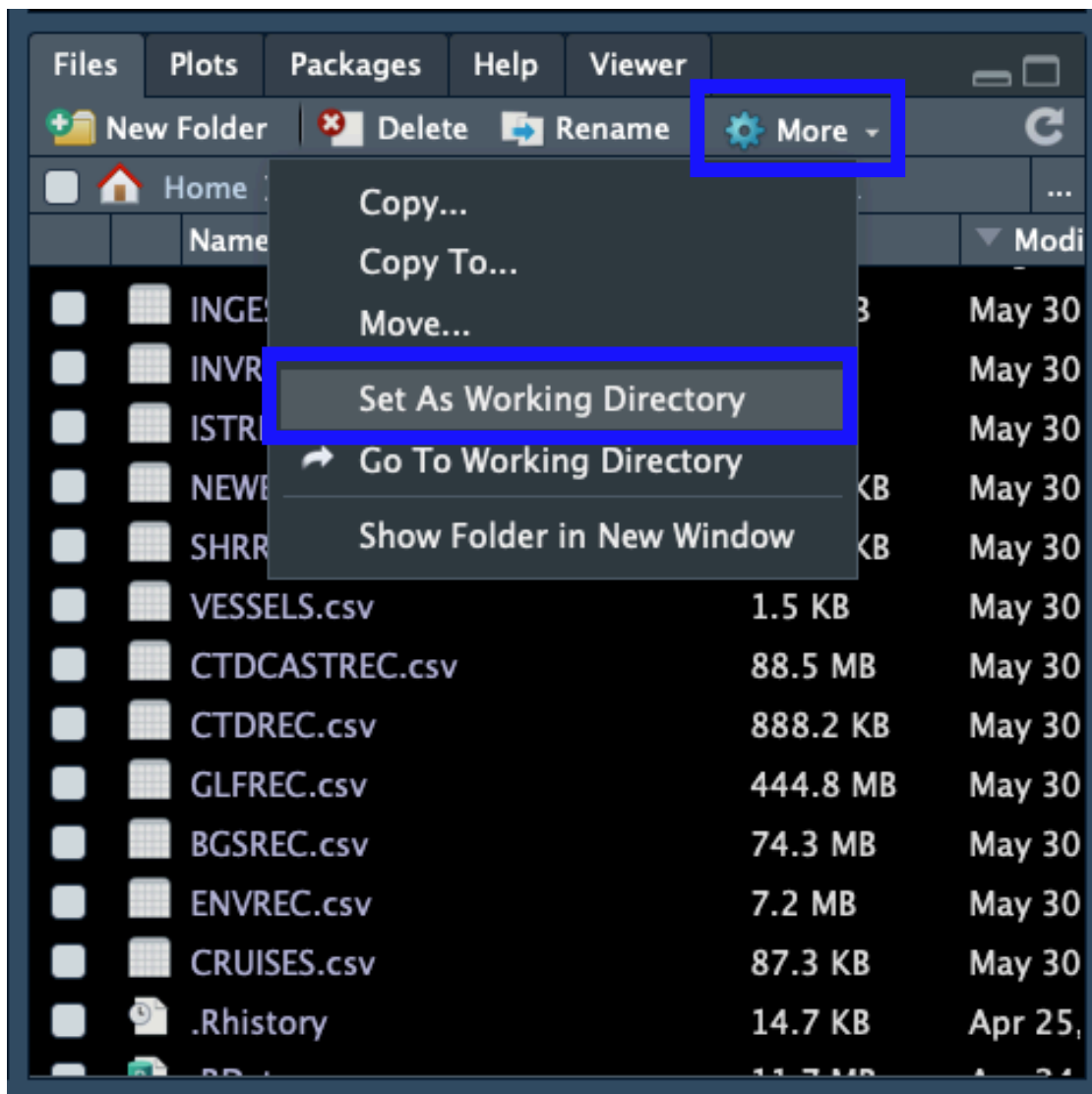
The "Files" tab will first look something like this:

You will see the series of folders you opened to get to your soon-to-be working directory at the top of the file window.
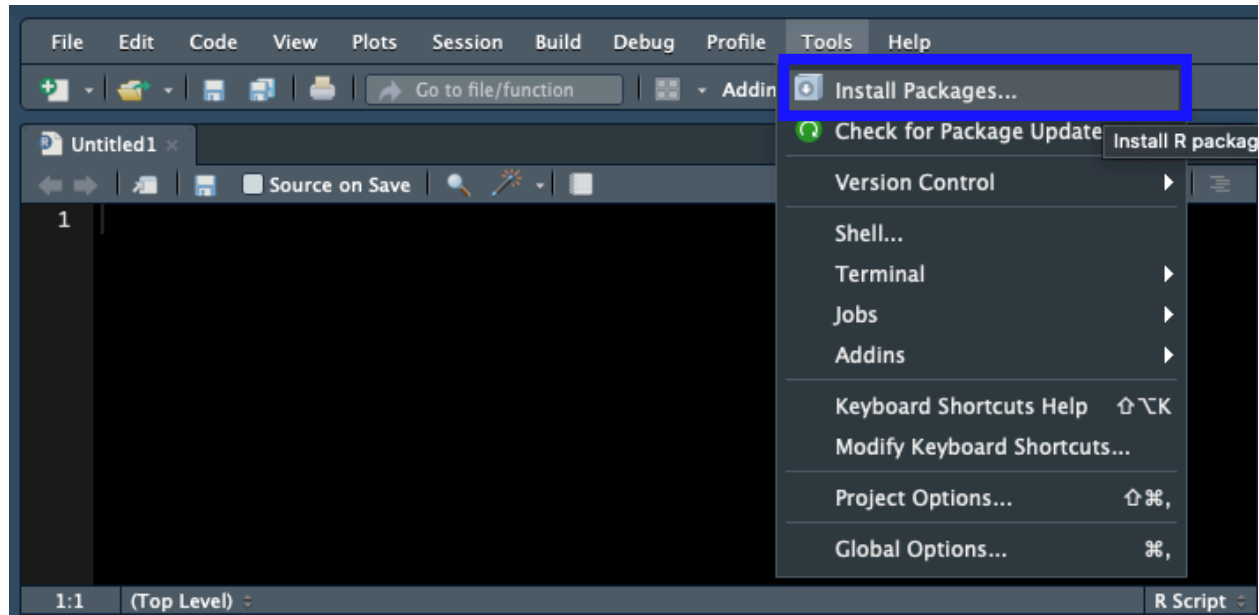
Developed by S. Calhoun

Once you've located the correct folder, click on the "More" button and select "Set As Working Directory" from the menu.

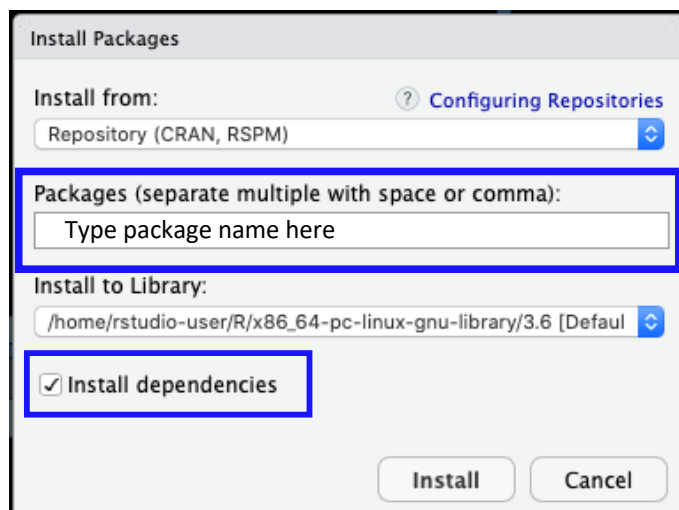**Note: The line of code that would be required to perform the same function will show up in the console pane.

Developed by S. Calhoun

Installing Packages

Packages or libraries expand the functionality of R. One way to install packages within Rstudio is to go to the "Tools" tab in the menu bar and select "Install packages."
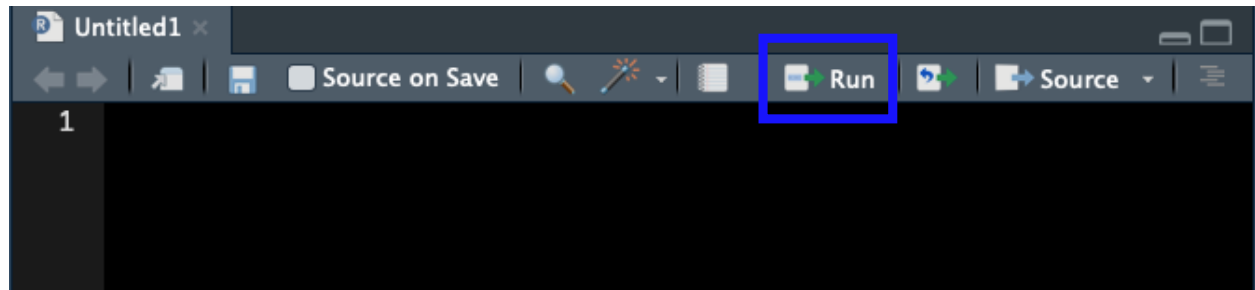

A new window will pop up allowing you to type in one or multiple packages that you want to install. Once entered, make sure the "install dependencies" box is checked and click "Install."

Developed by S. Calhoun
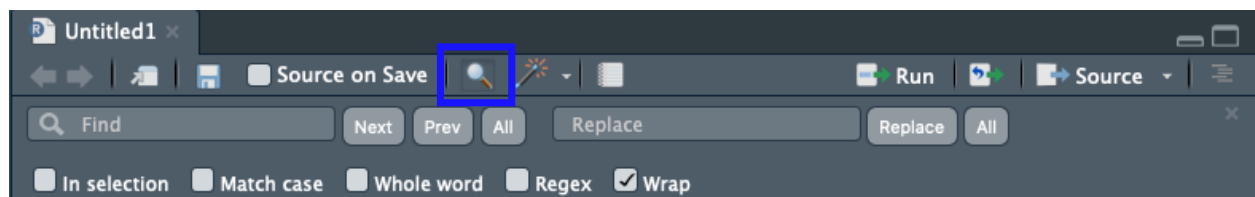
Running lines of code

In order to run lines of code that are typed in the code editor pane, you can place your cursor within the line of code or highlight a section of code and click on the "Run" button at the top of the code editor pane.

The button beside "Run" will re-run the previous code region and the "Source" button will run all of the code within the current script.

Search/Replace

If you need to find a term and/or replace it, click on the magnifying glass (inside blue box below) at the top of the code editor pane. A drop-down box will appear and allow you to search and replace a word/character string as needed. The box can be minimized by clicking on the small x in the top right corner.

Additional resources can be found at the Rstudio website: https://rstudio.com

Helpful Links for coding in R:

Free R exercises
https://www.r-exercises.com/start-here-to-learn-r/

List of the built-in colors in R
http://www.stat.columbia.edu/~tzheng/files/Rcolor.pdf

Colorblind friendly color palettes for ggplot2
http://www.cookbook-r.com/Graphs/Colors_(ggplot2)/#a-colorblind-friendly-palette

Developed by S. Calhoun