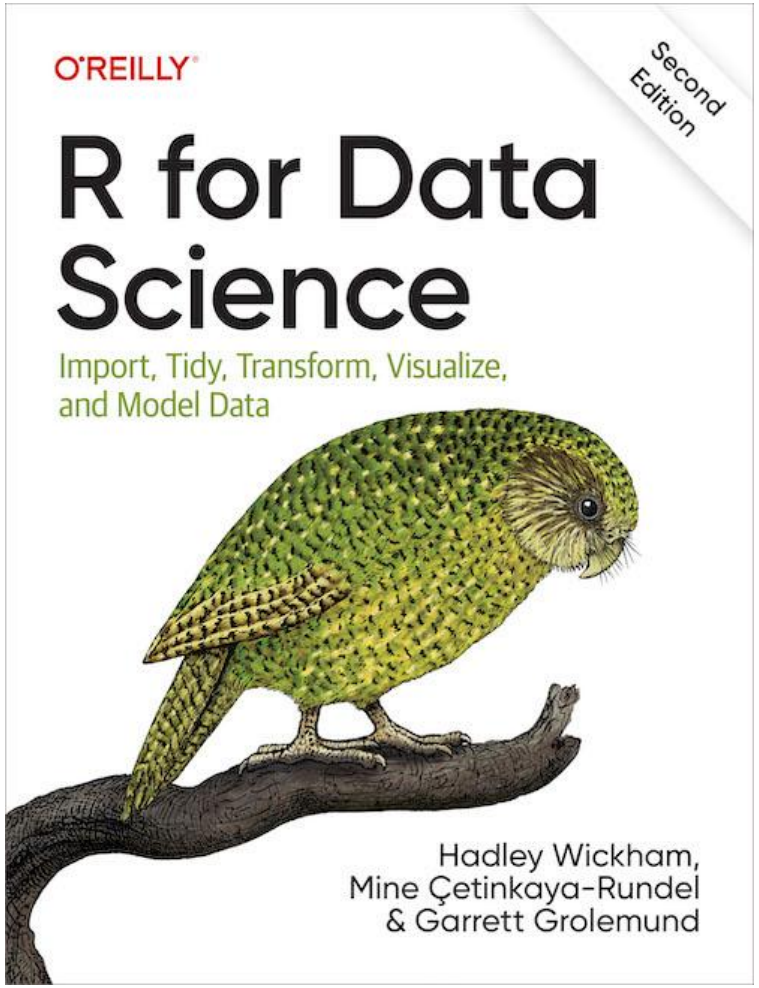
Introduction to R and Data Visualization Basics

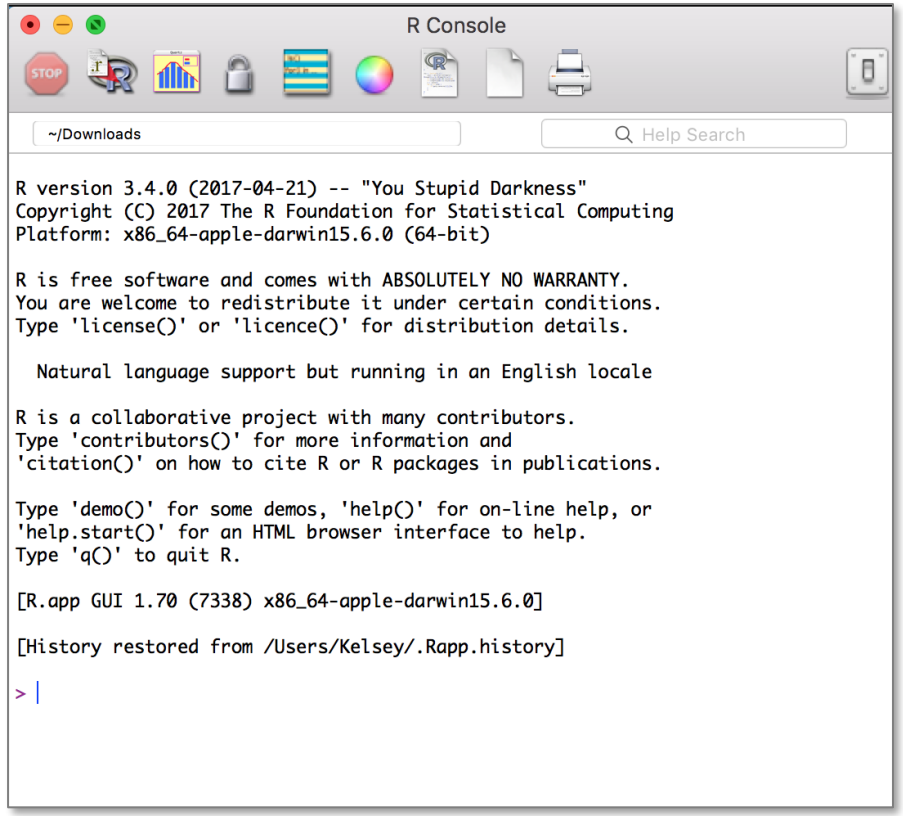
REU Workshop
July 1st 2025

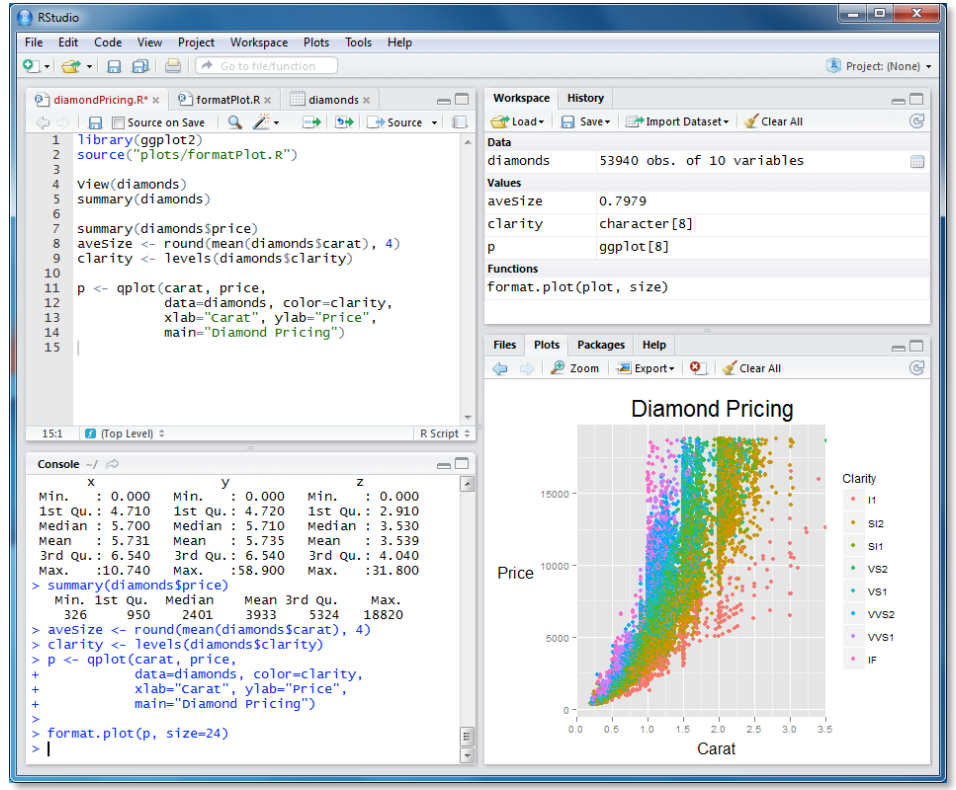
Recommended Resources



https://r4ds.hadley.nz/

You need two programs installed:

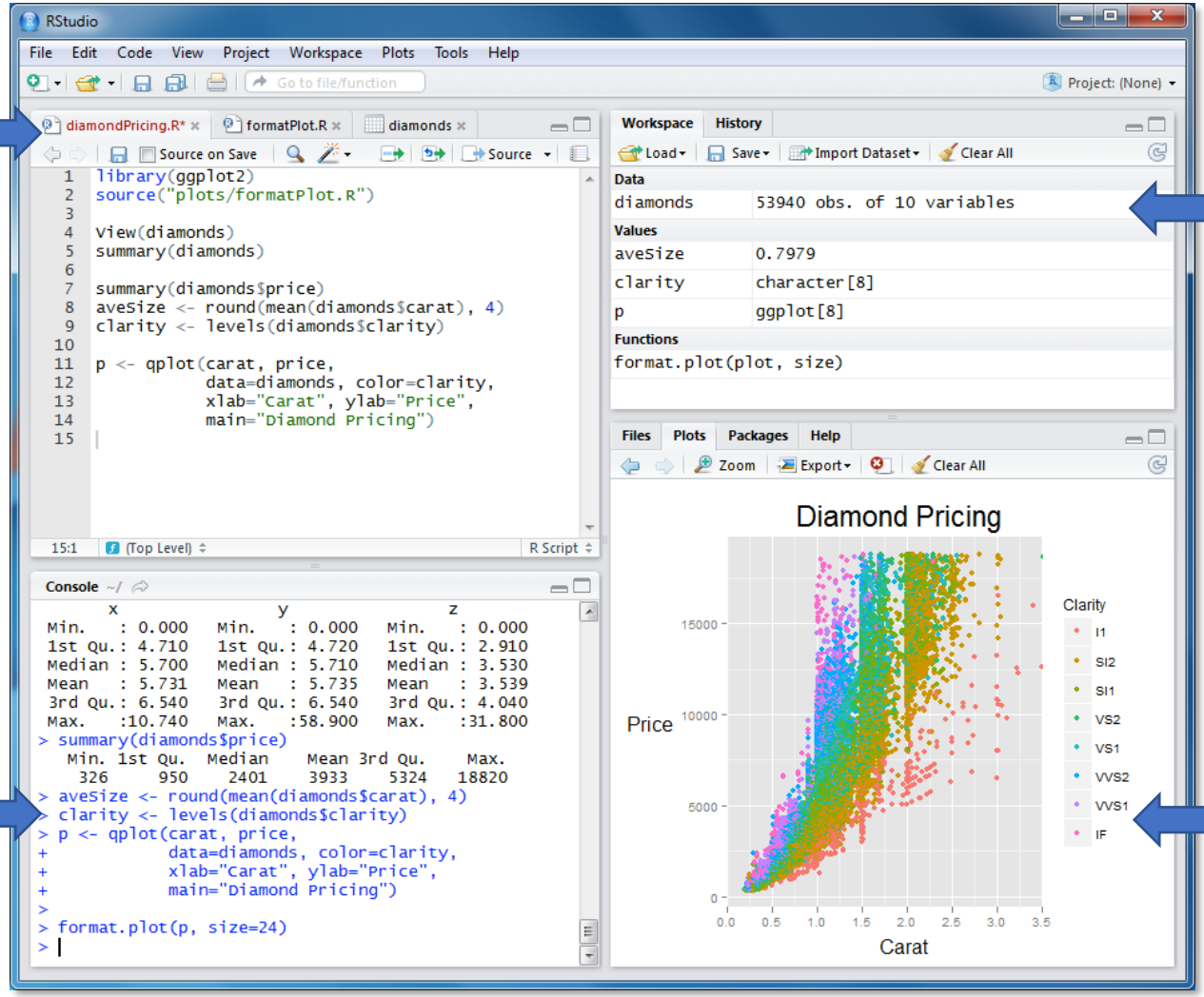




The R Studio Workspace

Script editor (where you type and save your code)

Console (where you can see what happened to your code)



Workspace-

- view your data and objects

History

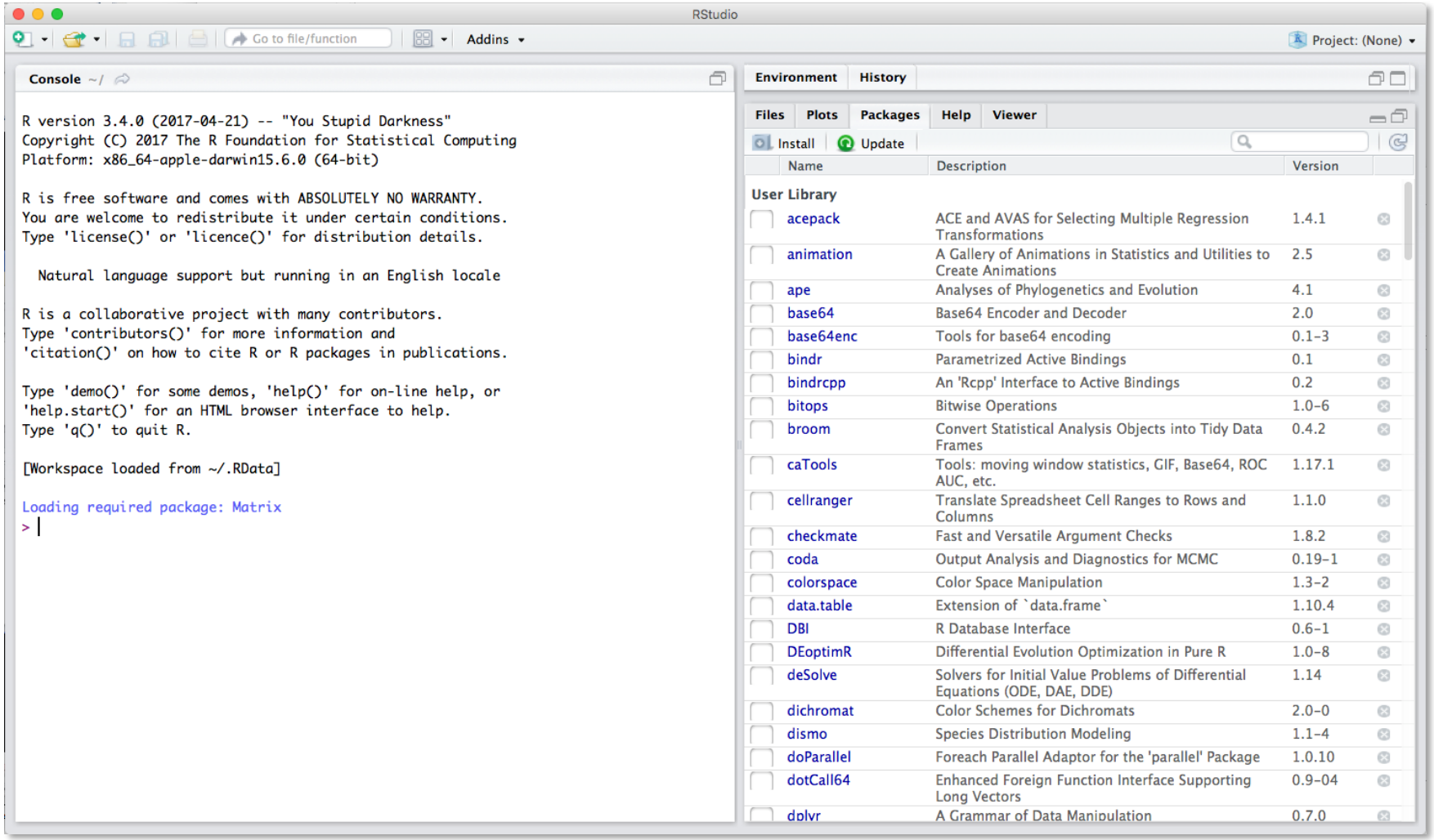
- View what has already happened in this session

View Plots, Load Packages, Ask for help

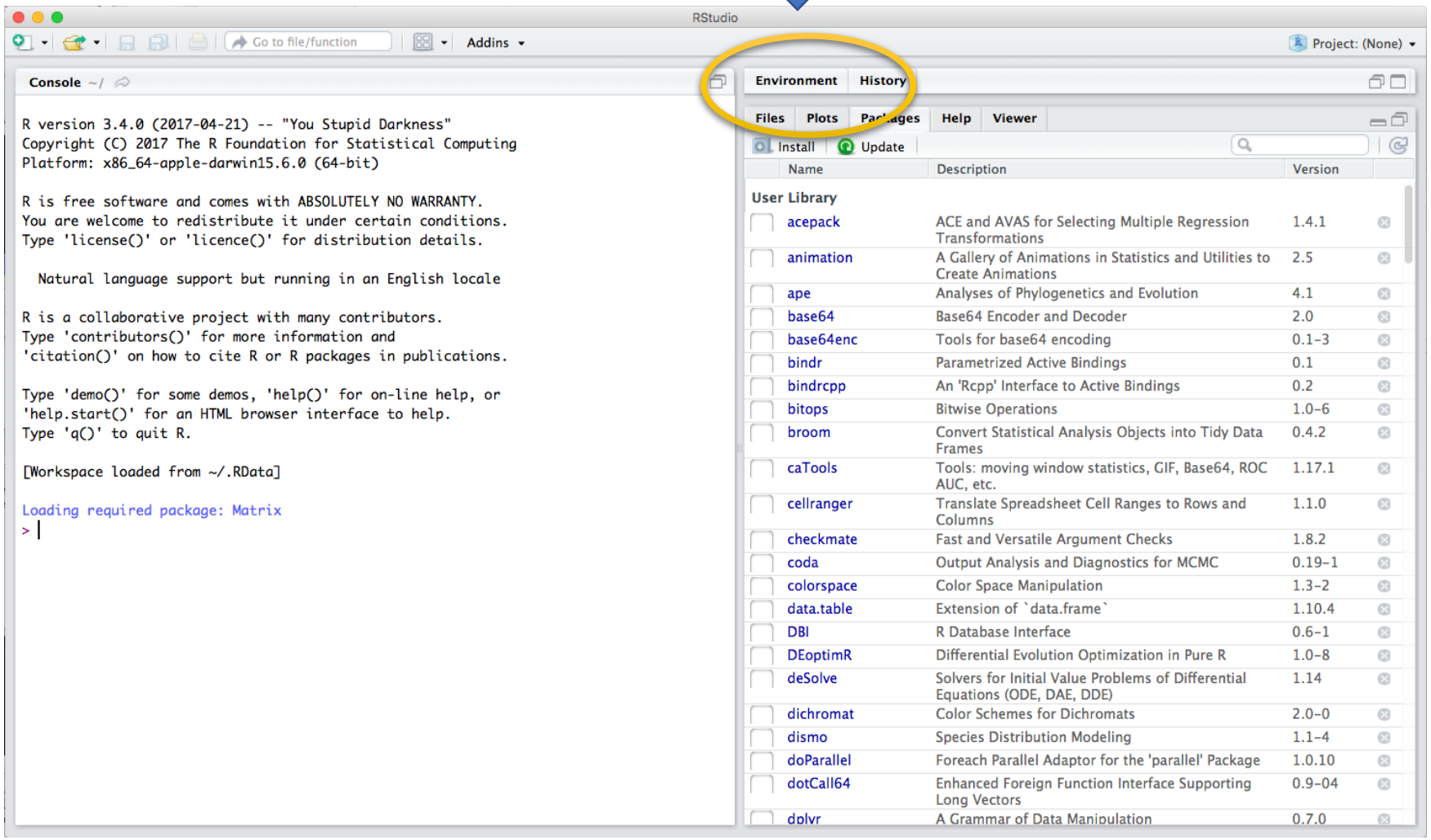
Setting up your workspace

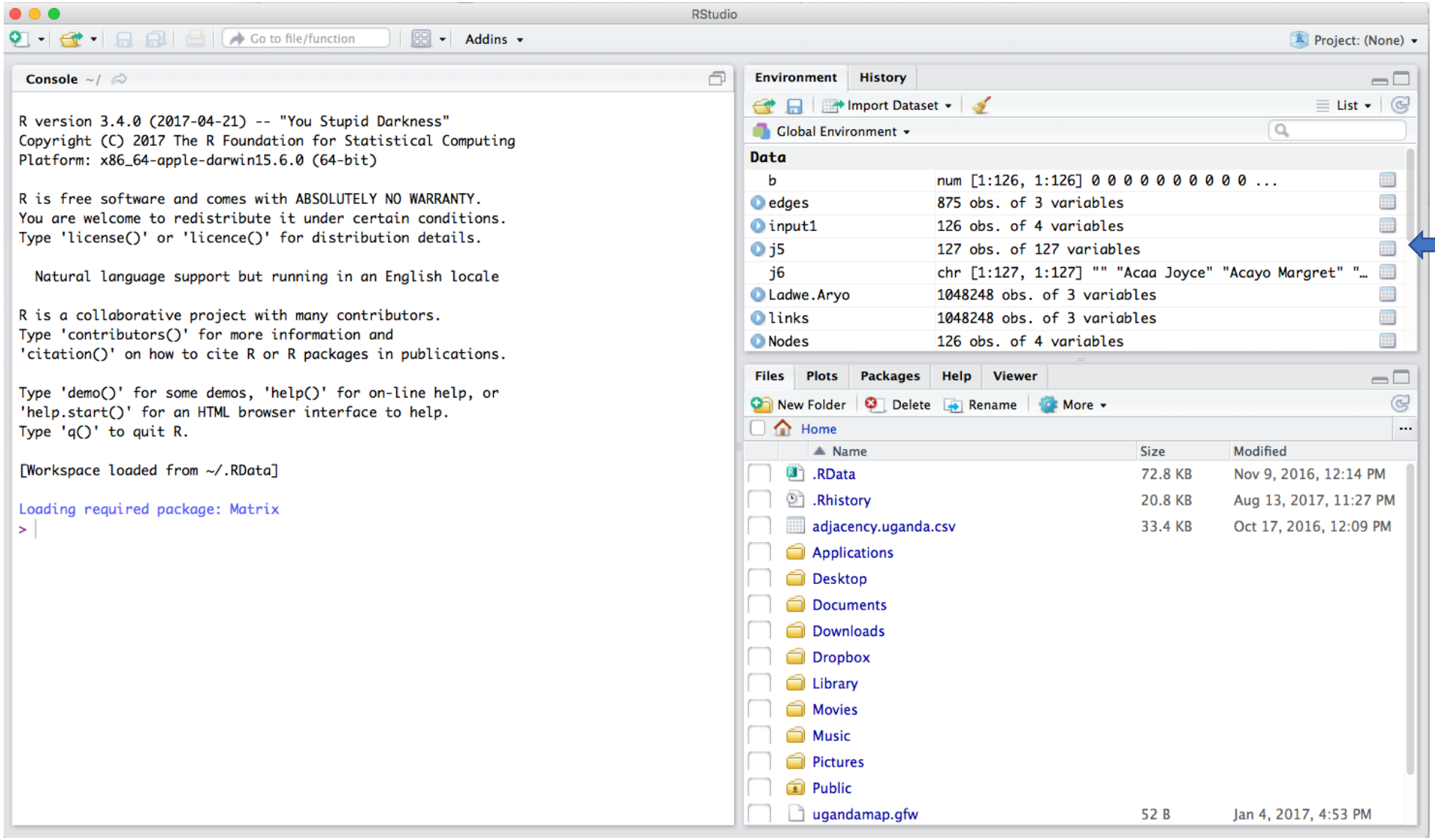
- Open R Studio..

When you open R Studio, you may see this:



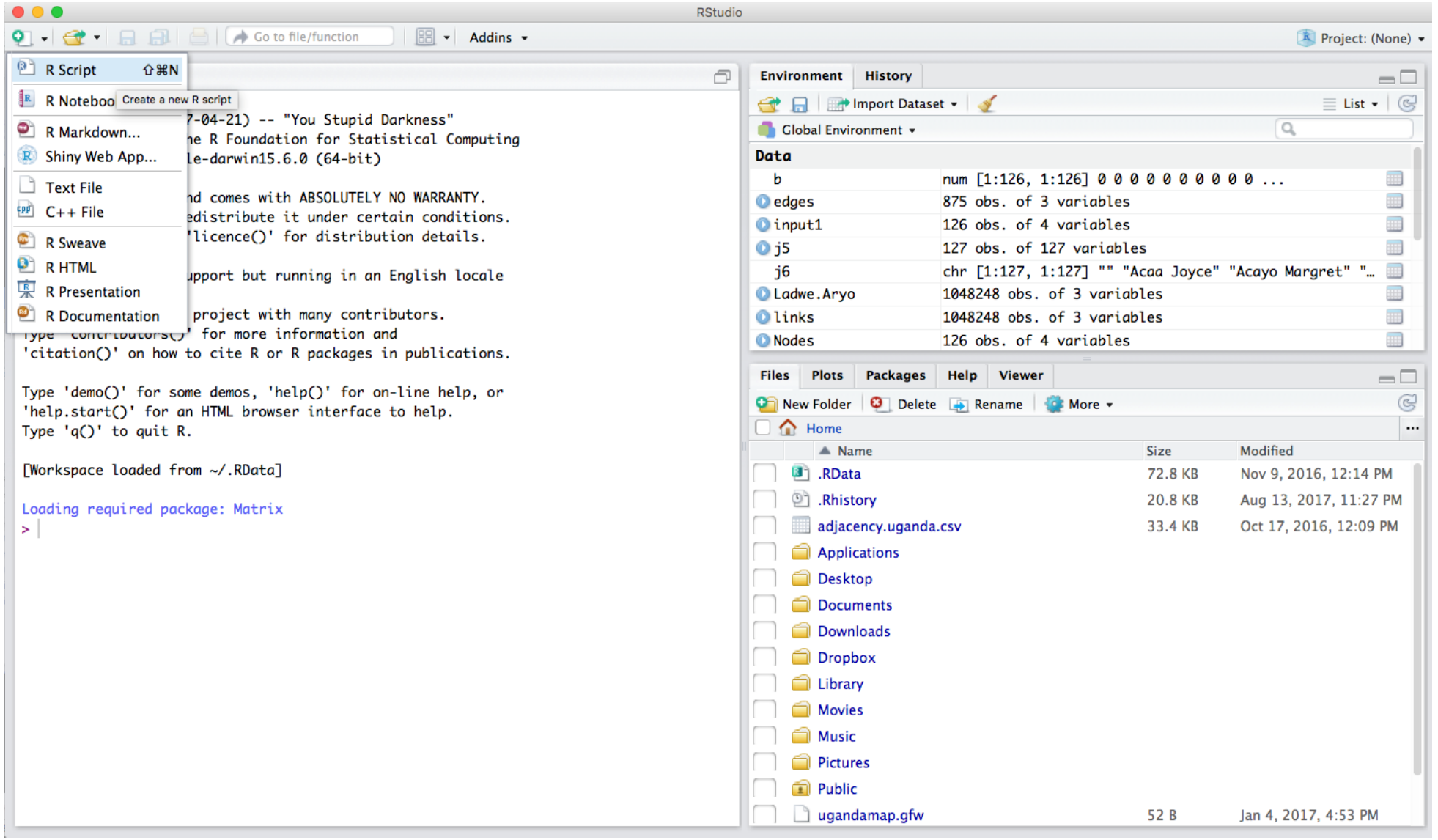
Click environment to show your current objects/ history





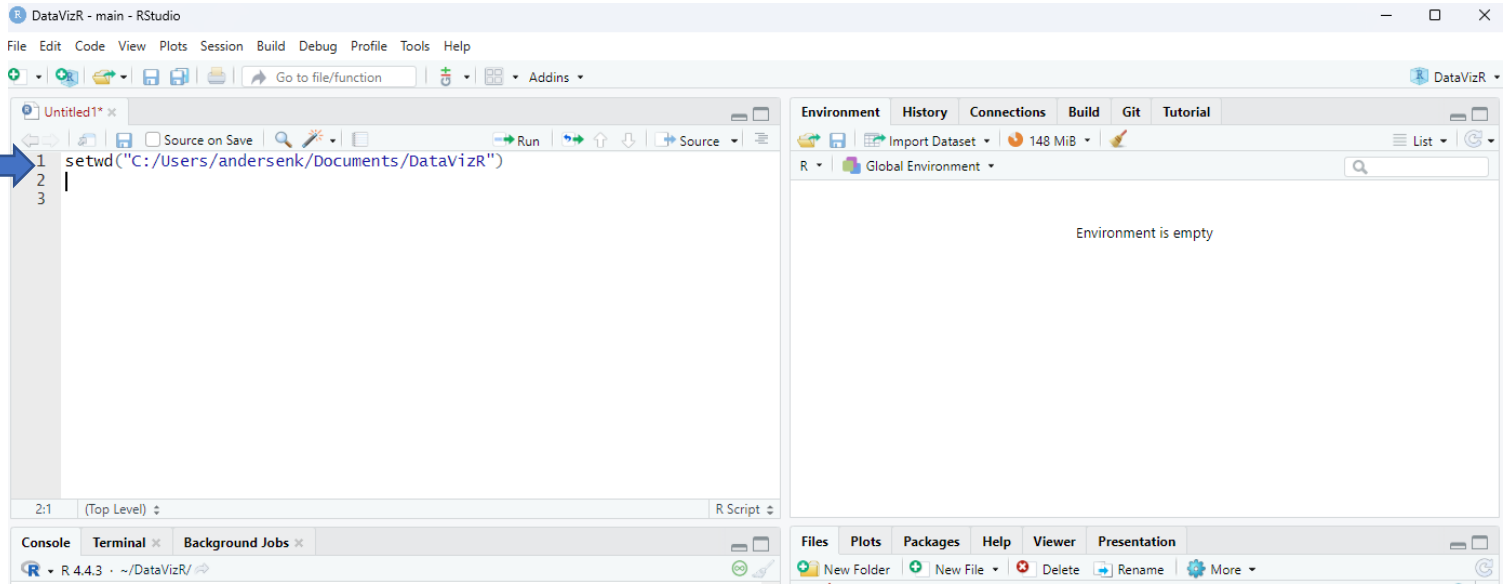
See the data frames and objects that you have used in this session

Open a fresh R script

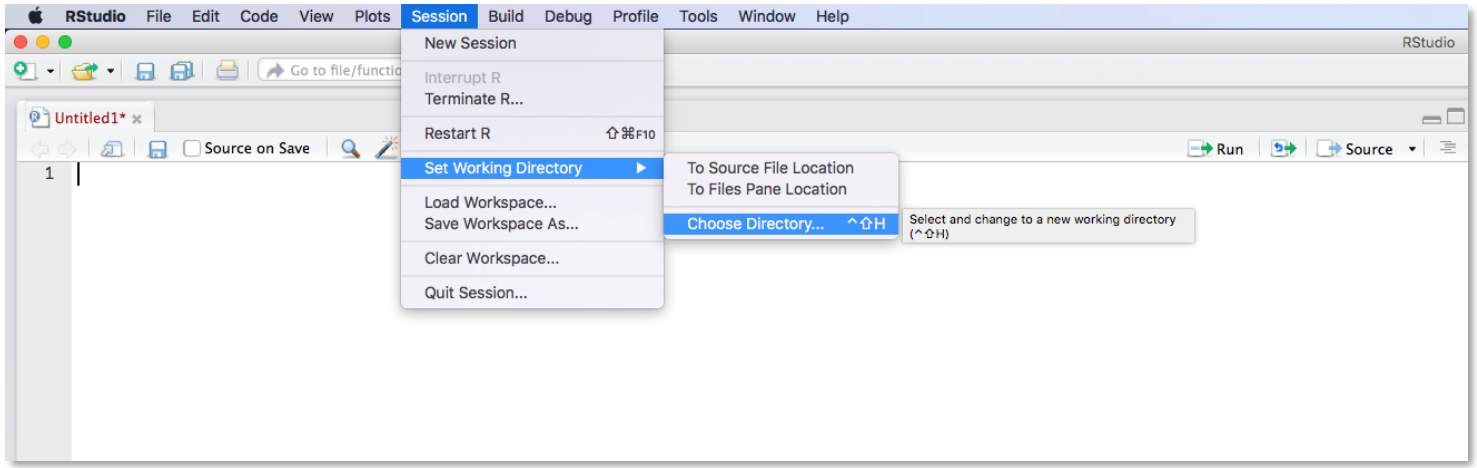


Setting your working directory

Option 1



Option 2

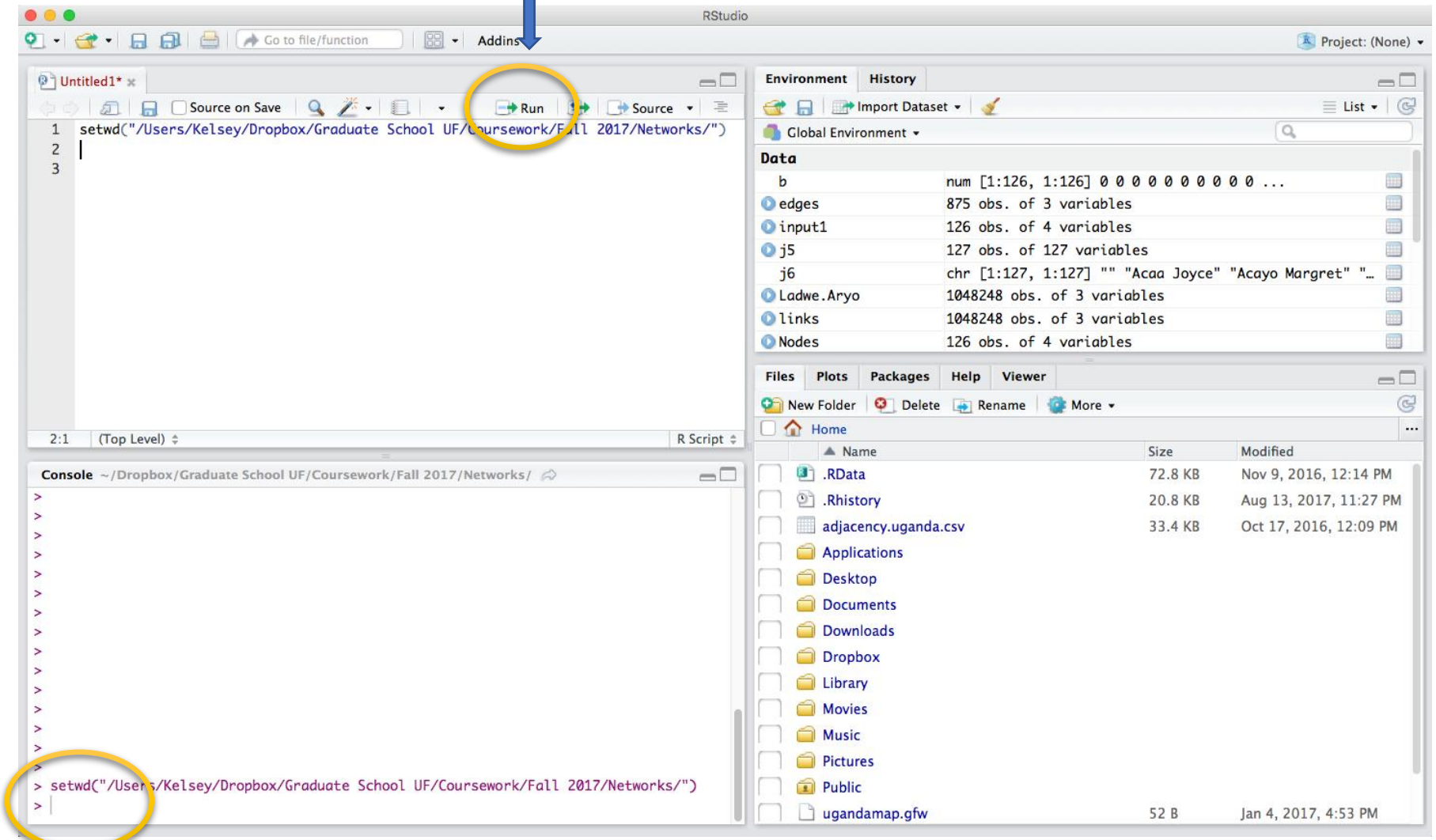


1. Your working directory is just a folder where:
   - Your scripts will be stored
   - You should place any data that needs to be imported into this session
   - Any files or images will be saved

2. Use `setwd()` and copy the path name of the folder that you want to use and past it in the script. Make sure you have quotes around your path name.

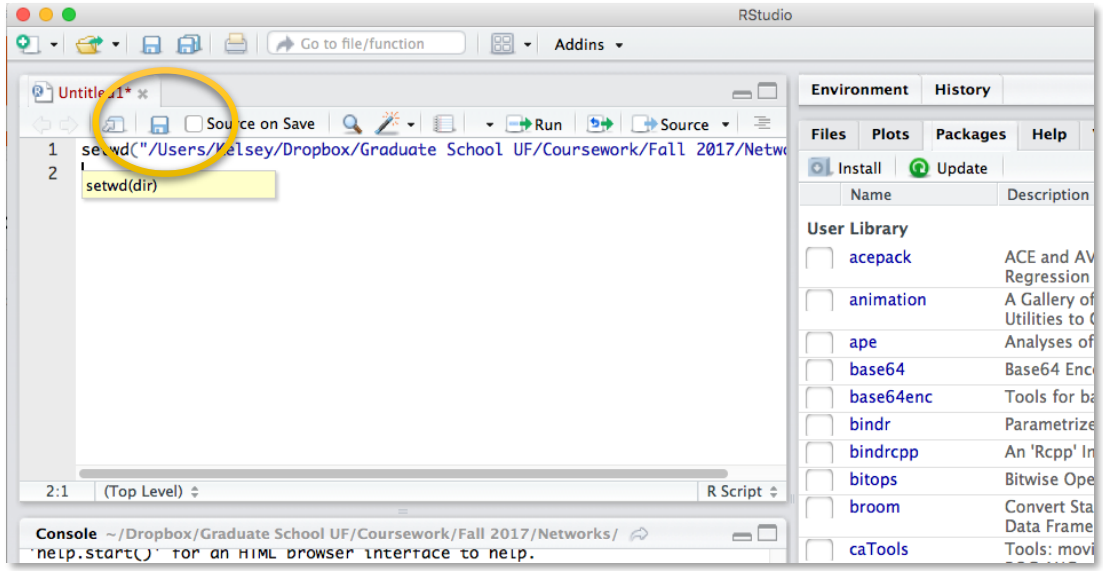
3. OR go to session > set working directory > choose directory. Select the folder that you would like to use.

Place your cursor anywhere on the `setwd()` command and click “run”



Check your console to make sure the command has been completed by checking to see if there is a new ”less than” sign under your line of code!

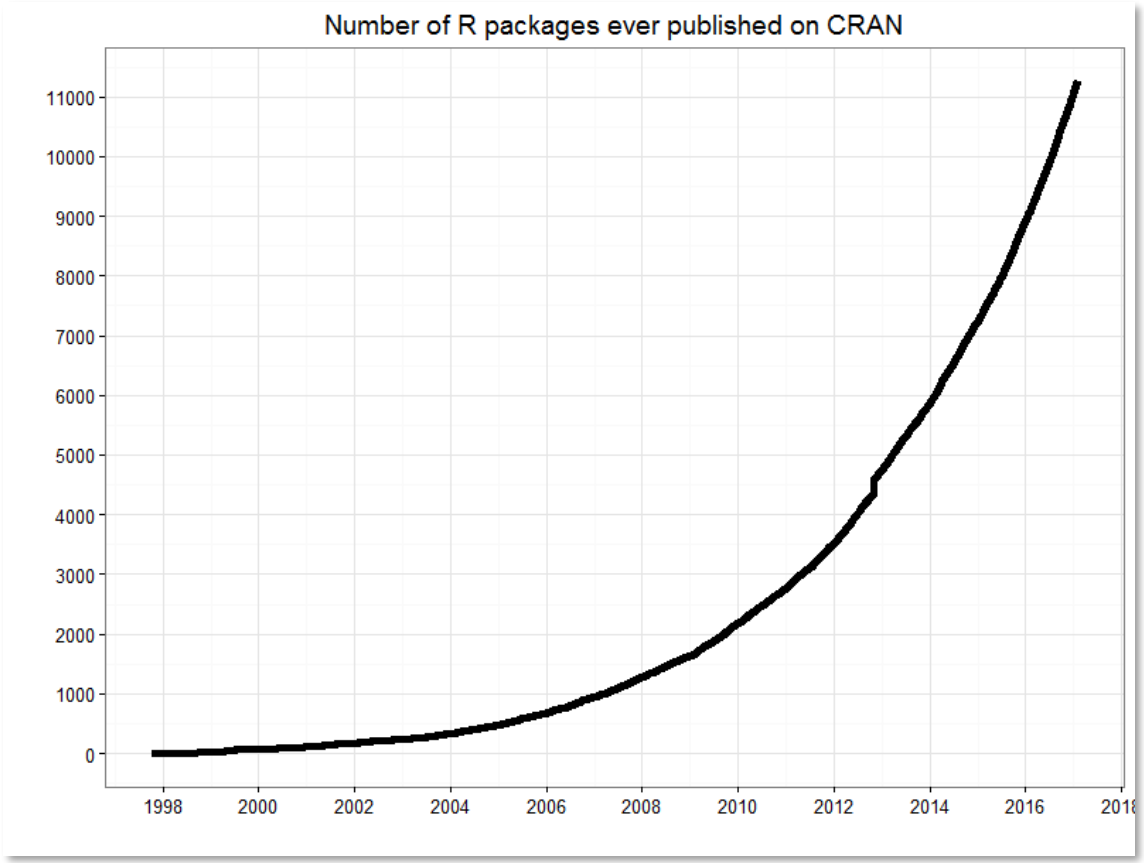
Next Steps:



1. Save R script by clicking “save” icon and name your script. You will notice that it is saving to your working directory.

R Packages

- You can do some basic calculations in base R but most things will be carried out in functions that are organized in packages.
- Packages are collections of r functions, data, and code that are usually developed to help with a specific task.
- There are over 10,000 packages on CRAN!
- Some are more organized, with better documentation than others



Some packages that you will use in this course:

- ggplot2
- igraph
- statnet
- matrix
- sna
- ergm
- tergm
- dplyr
- tidyverse