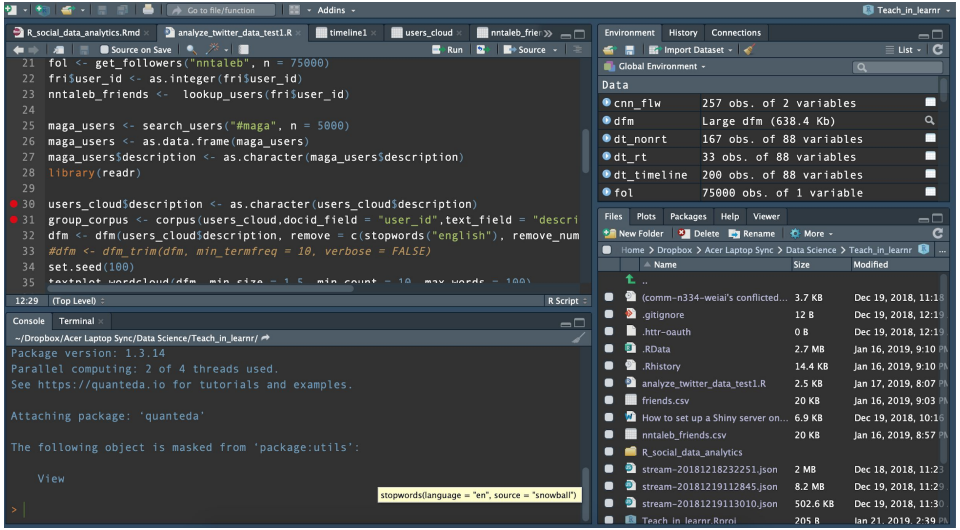
Set up R and RStudio, install libraries and explore R data frames

Weiai Xu (Wayne), PhD
Assistant Professor
Department of Communication, UMass-Amherst
Email: weiaixu@umass.edu
curiositybits.cc

Overview

1. Install R and RStudio
2. R interface
3. Create a R *project*
4. Introducing R *libraries*
5. What is *working directory*?



Install R in your machine

Download and install R:

https://www.r-project.org/

Download and install RStudio:

https://www.rstudio.com/

Install R and RStudio

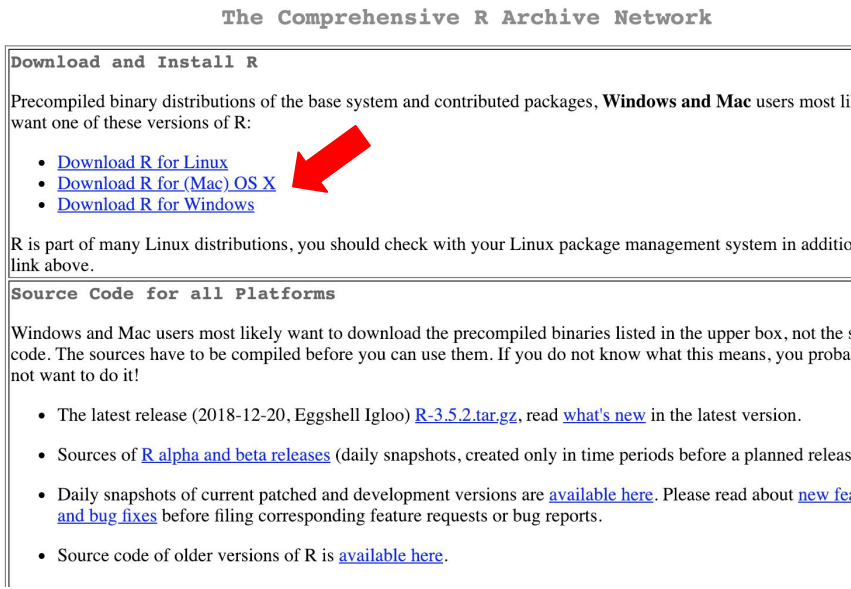
1. Install R language: https://cloud.r-project.org/

CRAN
Mirrors
What's new?
Task Views
Search

About R
R Homepage
The R Journal

Software
R Sources
R Binaries
Packages
Other

Documentation
Manuals
FAQs
Contributed



The Comprehensive R Archive Network

Download and Install R

Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most li
want one of these versions of R:

- Download R for Linux
- Download R for (Mac) OS X
- Download R for Windows

R is part of many Linux distributions, you should check with your Linux package management system in additio
link above.

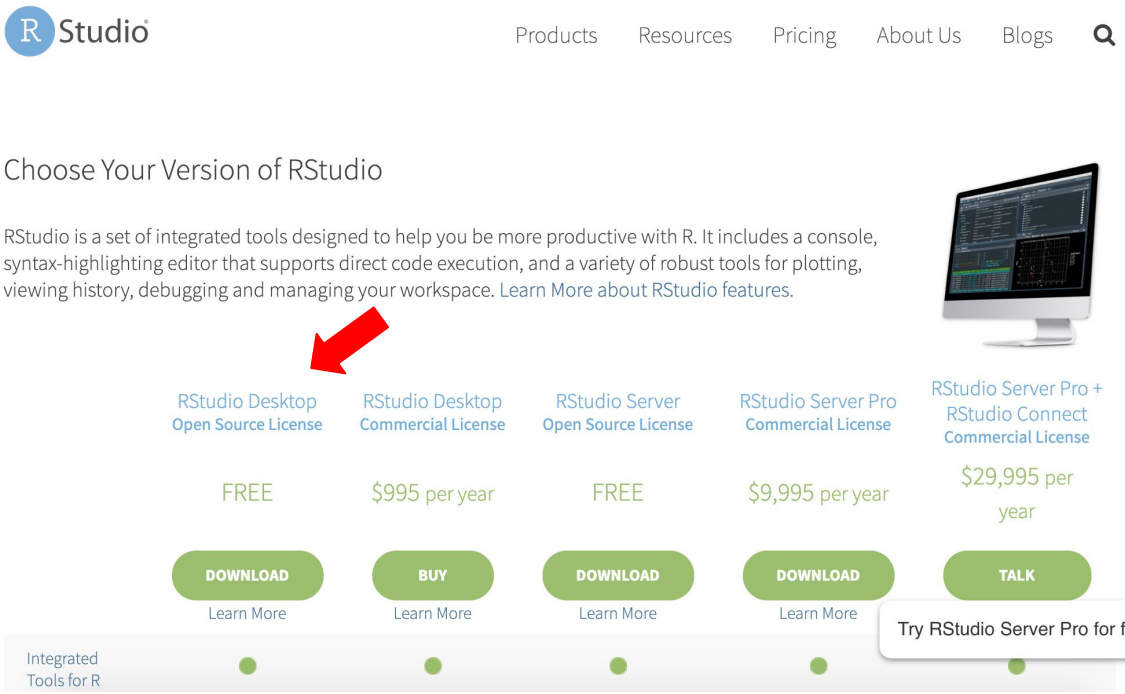
Source Code for all Platforms

Windows and Mac users most likely want to download the precompiled binaries listed in the upper box, not the s
code. The sources have to be compiled before you can use them. If you do not know what this means, you proba
not want to do it!

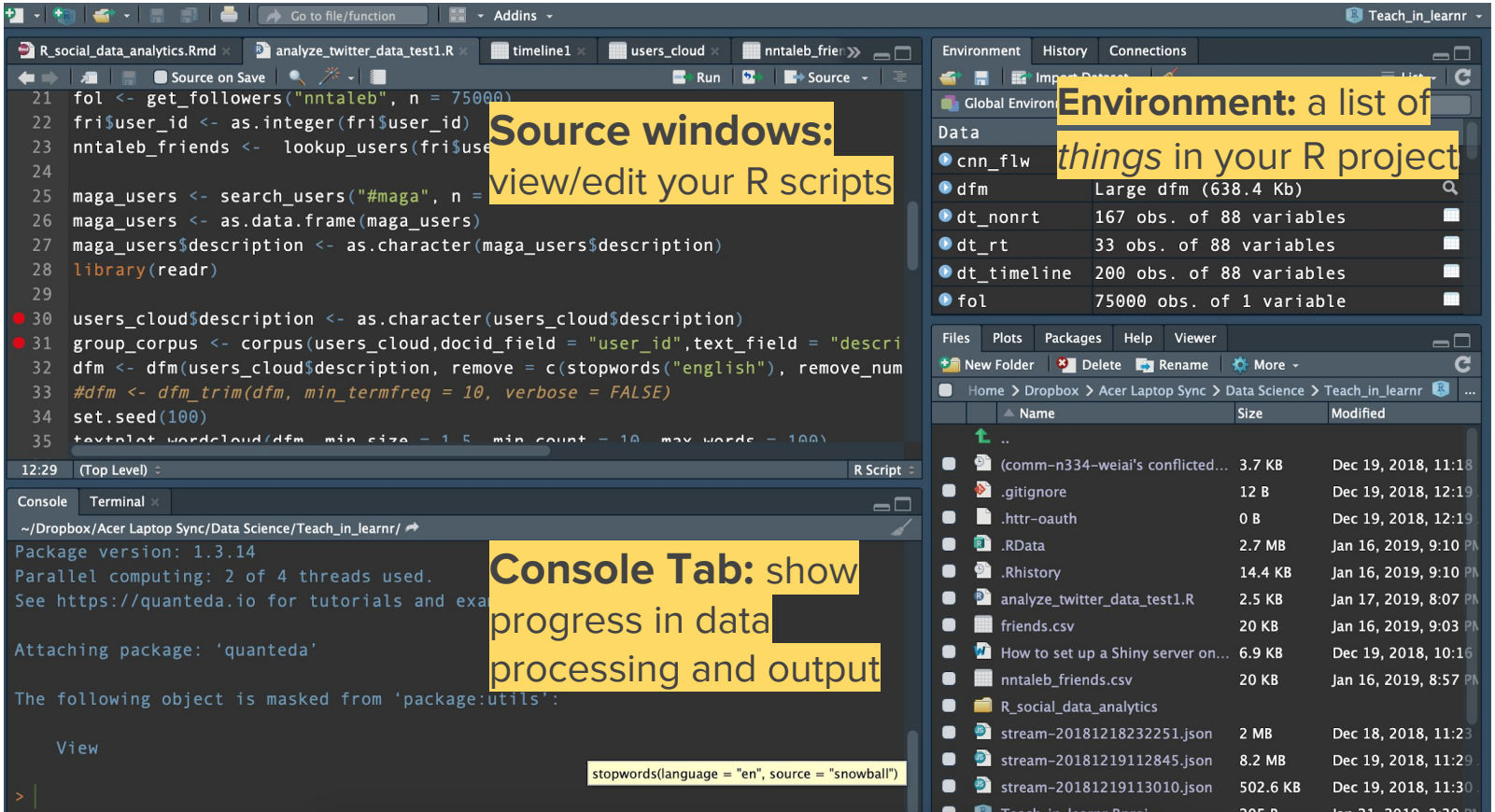
- The latest release (2018-12-20, Eggshell Igloo) R-3.5.2.tar.gz, read what's new in the latest version.
- Sources of R alpha and beta releases (daily snapshots, created only in time periods before a planned releas
- Daily snapshots of current patched and development versions are available here. Please read about new fe
  and bug fixes before filing corresponding feature requests or bug reports.
- Source code of older versions of R is available here.

Install R and RStudio

1. Install RStudio: https://www.rstudio.com/products/rstudio/download/#download

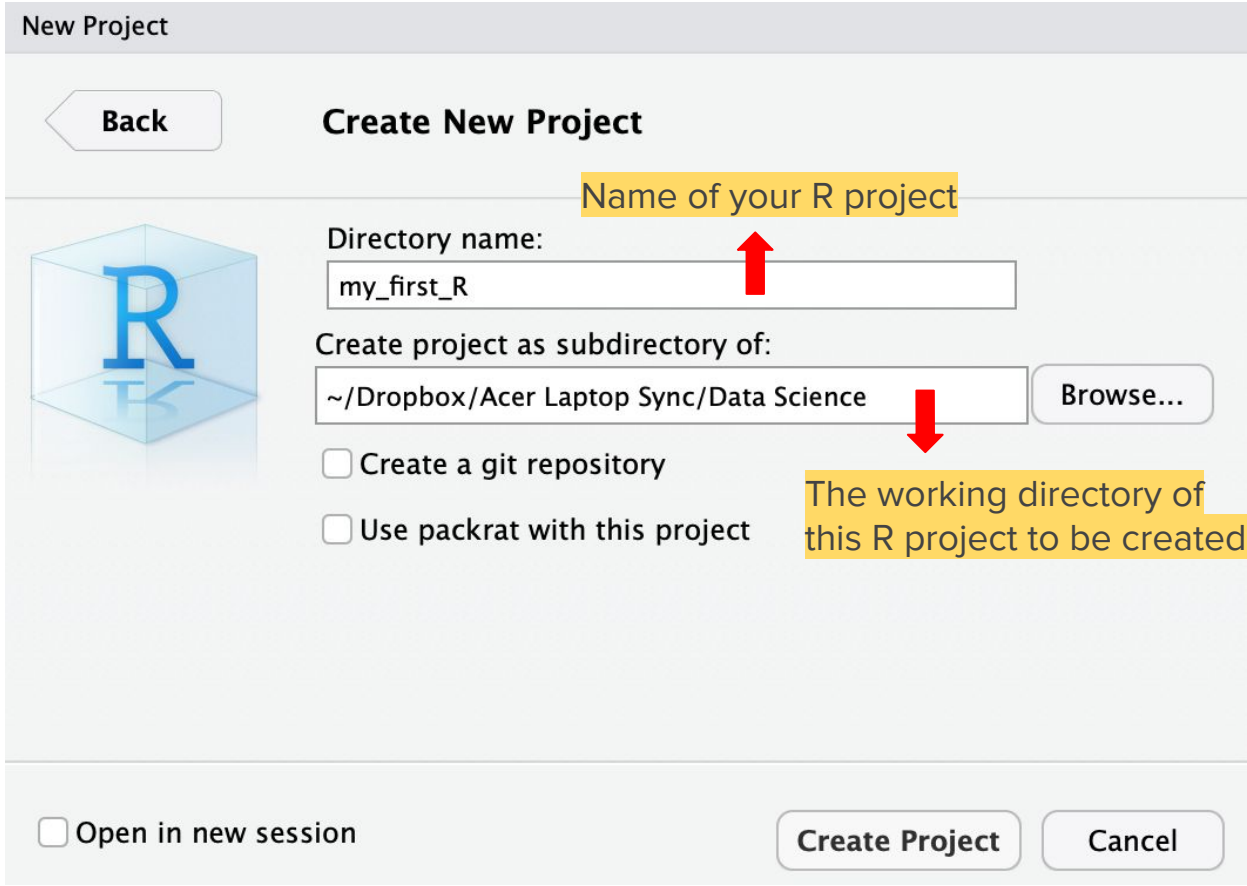


R Interface


Source windows: view/edit your R scripts
Environment: a list of *things* in your R project
Console Tab: show progress in data processing and output
R_social_data_analytics.Rmd
analyze_twitter_data_test1.R
timeline1
users_cloud
Source on Save
Run
Source
Environment
History
Connections
Data
cnn_flw
dfm
Large dfm (638.4 Kb)
dt_nonrt
167 obs. of 88 variables
dt_rt
33 obs. of 88 variables
dt_timeline
200 obs. of 88 variables
fol
75000 obs. of 1 variable
Files
Plots
Packages
Help
Viewer
New Folder
Delete
Rename
More
Home > Dropbox > Acer Laptop Sync > Data Science > Teach_in_learnr
Name
Size
Modified
Console
Terminal
~/Dropbox/Acer Laptop Sync/Data Science/Teach_in_learnr/
Package version: 1.3.14
Parallel computing: 2 of 4 threads used.
Attaching package: 'quanteda'
The following object is masked from 'package:utils':
View
stopwords(language = "en", source = "snowball")
12:29
(Top Level)
R Script

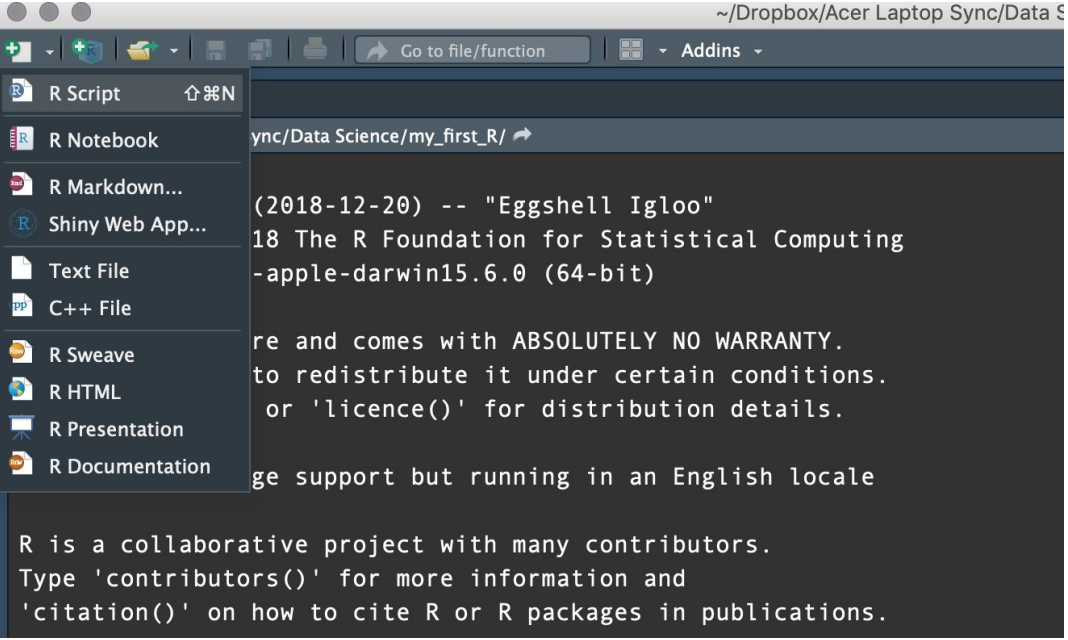
Create a R project

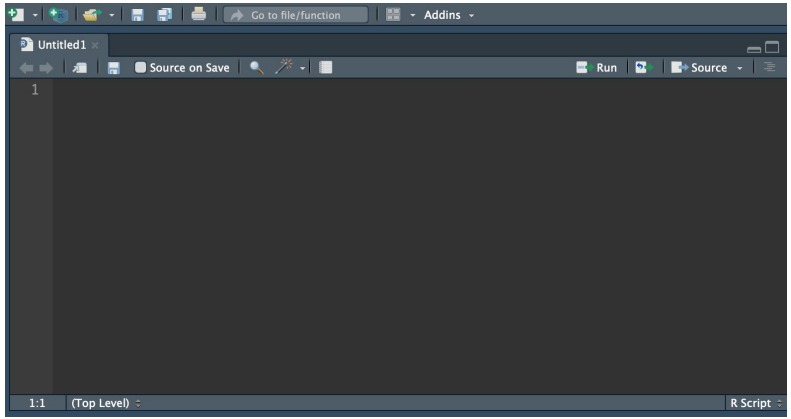
File--New Project...



Create a R project

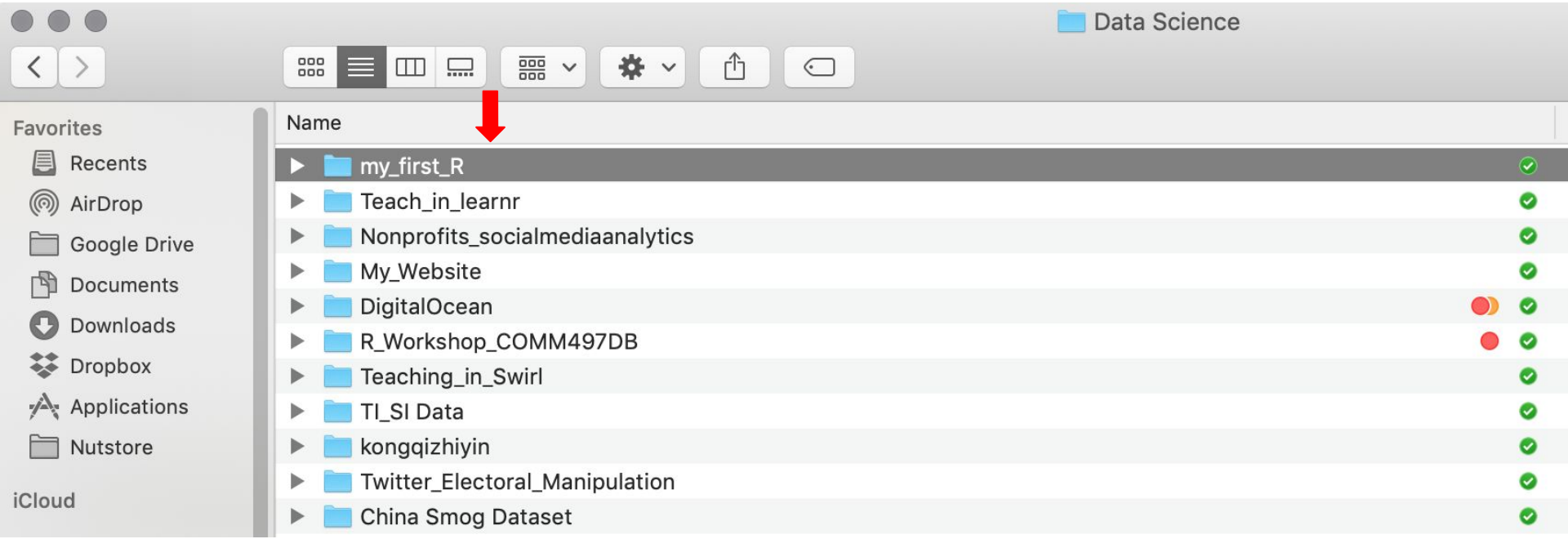
Add a R script for the newly created project





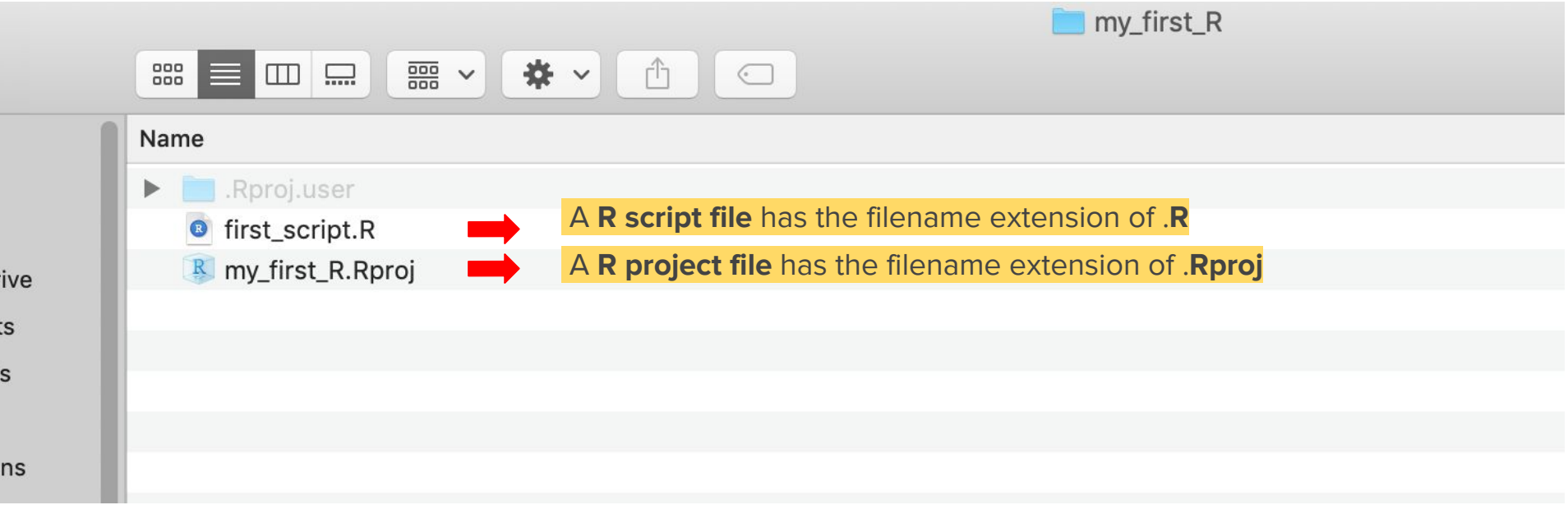
Create a R project

Explore the working directory for this R project



Create a R project

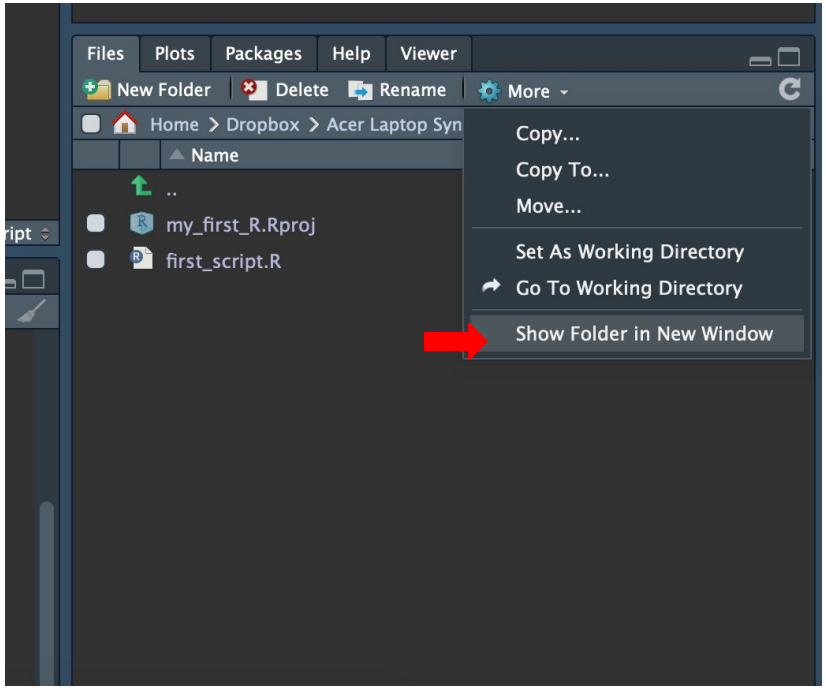
Explore the working directory for this R project



Create a R project

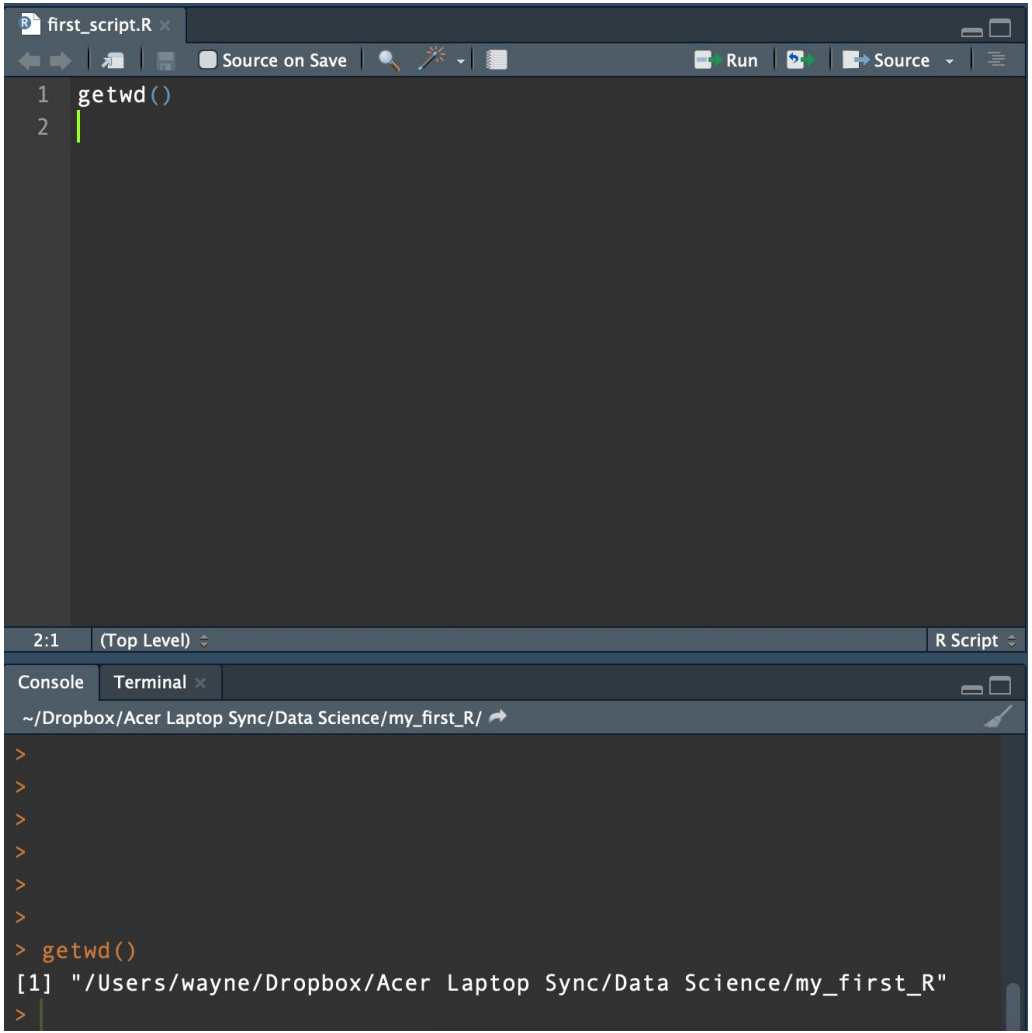
Open the directory folder from RStudio

Each R project has a designated folder to store R scripts and data (the folder is referred to as the working directory)



Create a R project

Find out your current working directory



Create a R project

Let’s try some simple R codes

Use [**COMMAND**]+[**ENTER**] key on Mac, and [**CONTROL**]+[**ENTER**] key on PC to run a R script one line at a time.

To run multiple lines, just select them and run.

```
getwd()
```

```
a <- "this is my first line of R code"
```

```
typeof(a)
```

Install a R library

What is a library/package? Think of R as an operating system (e.g., iOS, Windows) and a library/package as an app running on the system. Each library is designed to accomplish specific tasks.

Use **install.packages()** to install libraries. Use **library()**, or **require()** to load an installed library.

Please follow the tutorial at:
https://curiositybits.shinyapps.io/R_social_data_analytics/#section-librariespackages

Data frame

A R data frame is a two-dimensional table with rows and columns. Put simply, a R data frame is a spreadsheet.

Please follow the tutorial at:
https://curiositybits.shinyapps.io/R_social_data_analytics/#section-data-frames

And use the practice script available on Moodle (W1_install_libraries_and_explore_data_frames.R)