# Project Organization

## STAT 133

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# Introduction

# Things around a Research Project

## Typically ...

- There is some interesting problem/phenomenon
- Giving raise to some research questions
- Data from experiments, surveys, observations, processes, etc
- Data cleaning, transformation, processing
- Exploratory Analysis (summaries, tables, plots)
- Study associations, relationships
- Perhaps some data modeling
- Reporting: white papers, slides, articles, etc

# Organizing a Project

# Anatomy of a Project (basic)

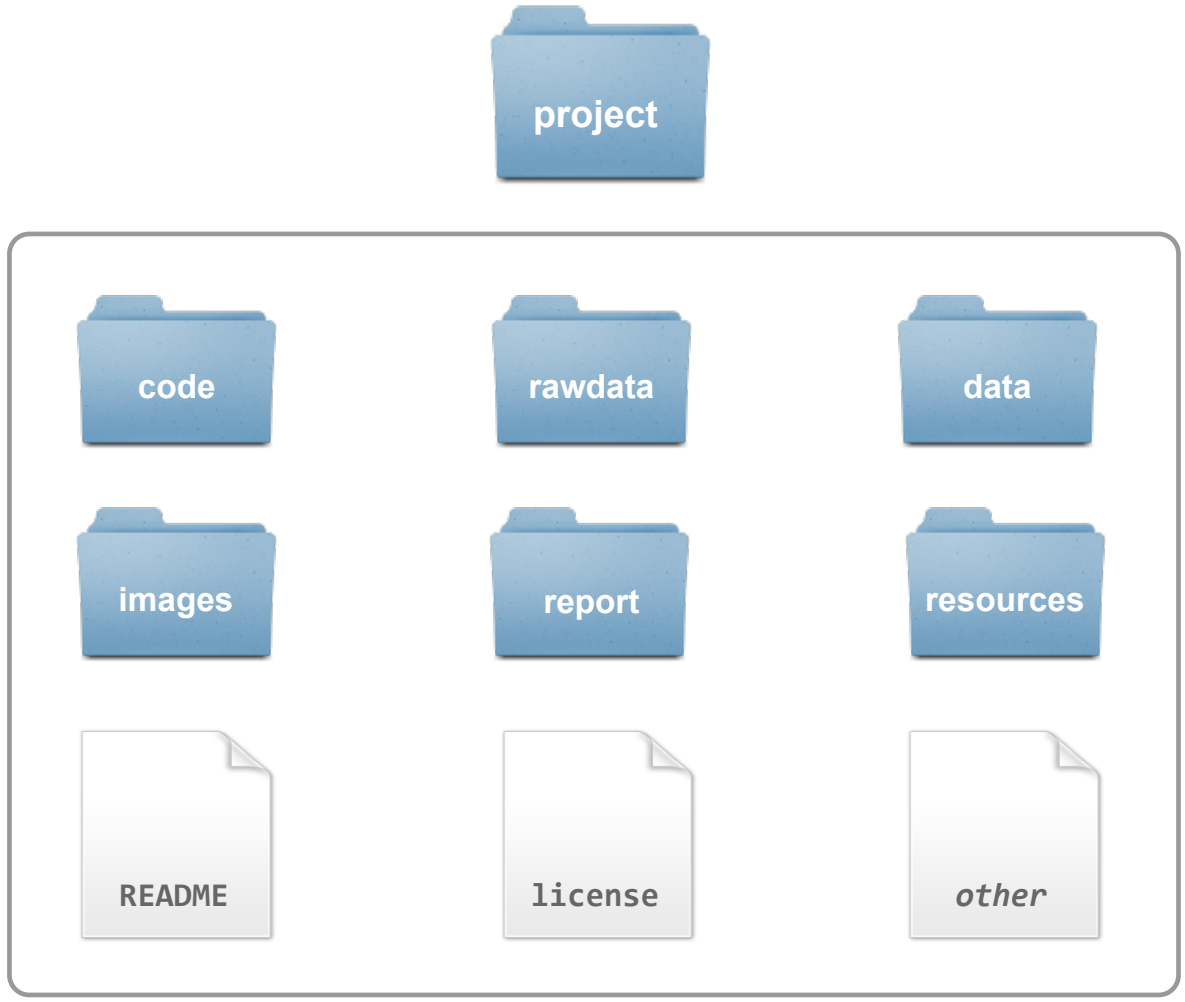

Every project has its own directory

# Anatomy of a Project

## Project Subdirectories

- `README` file: description of the project
- **code**: functions and scripts
- **data**: where the data files will live
- **images** (or figures): images, plots, figures
- **report**: final report, slides
- **resources**: articles, references, inspiring things

# Anatomy of a Project (more options)



# Anatomy of a Project

## Project Subdirectories

- `README` file: description of the project
- **code**: functions and scripts
- **rawdata**: only raw data files
- **data**: clean data for analysis
- **images** (or figures): images, plots, figures
- **report**: final report, slides
- **resources**: articles, references, inspiring things
- `license` file: maybe you need a license
- `other` file: other required file?

# Anatomy of a Project

## `code` directory

All your scripts, functions, programs go here

## `rawdata` directory

To store original data files. DON'T touch this!

## `data` directory

To store cleaned and processed data files.
(these are the ones you use for your analysis, plots, etc)

# Anatomy of a Project

## `images` directory

To store all your plots, charts, graphics, illustrations, etc
(ideally produced from your code)

## `resources` directory

References, papers, docs, supporting material, etc
(things that have helped with your project)

## `report` directory

Your final report: exec summary, document, slides, poster, etc

# Anatomy of a Project

## `README` file

File describing what your project is about, and other important details (how are the files organized, authors, contact, etc)—It's an *About* file.

## `License` file

Perhaps your project needs a license
e.g. `http://creativecommons.org/`

## `other` file / `extra` directory

For things that don't fit in any of the previous files/directories

# Project Organization

## Considerations

- Get use to organize your projects
- You can develop your own system:
  - naming style, file-dirs structure
- Back your projects up
  - e.g. Dropbox, github, cloud storage
- Check how other people organize their projects

# Sharing your Projects

## Consider sharing your projects

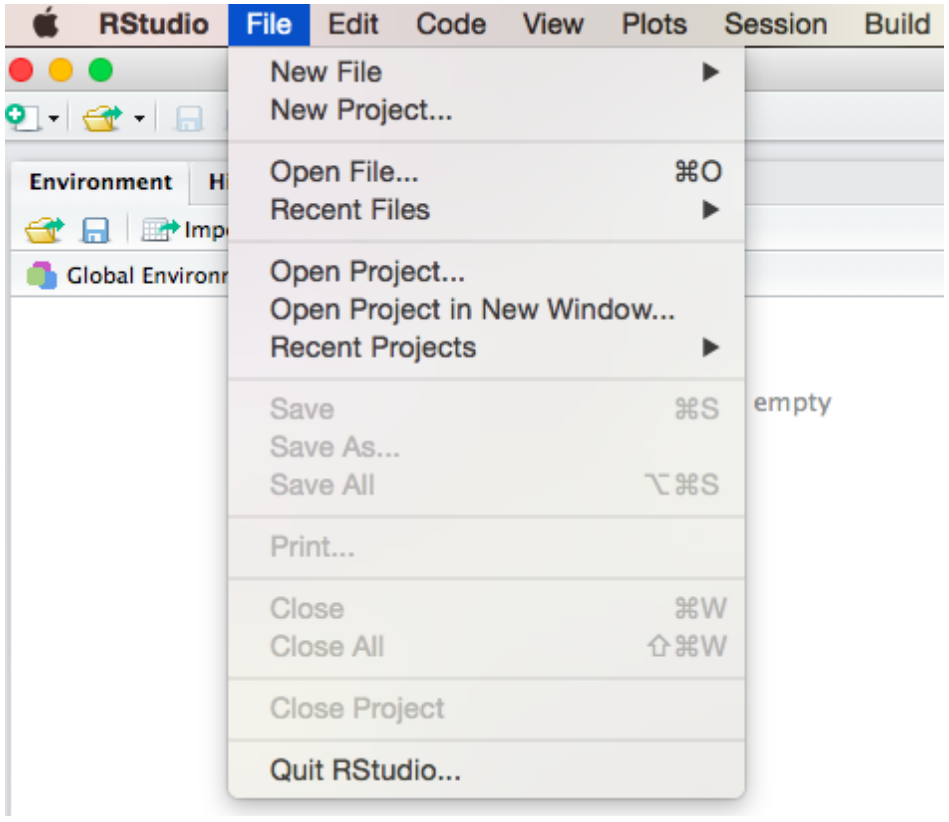
- Dare to share!
- Writing Code (scripts, functions, etc) implies a lot of work
- Most of the time this work never sees the "screen light"
- In many cases is like writing papers
- Opportunity to give something back (you've benefitted from others' code)
- Free peer review
- Not as bad as it may seem/sound

# RStudio Projects

# RStudio Project

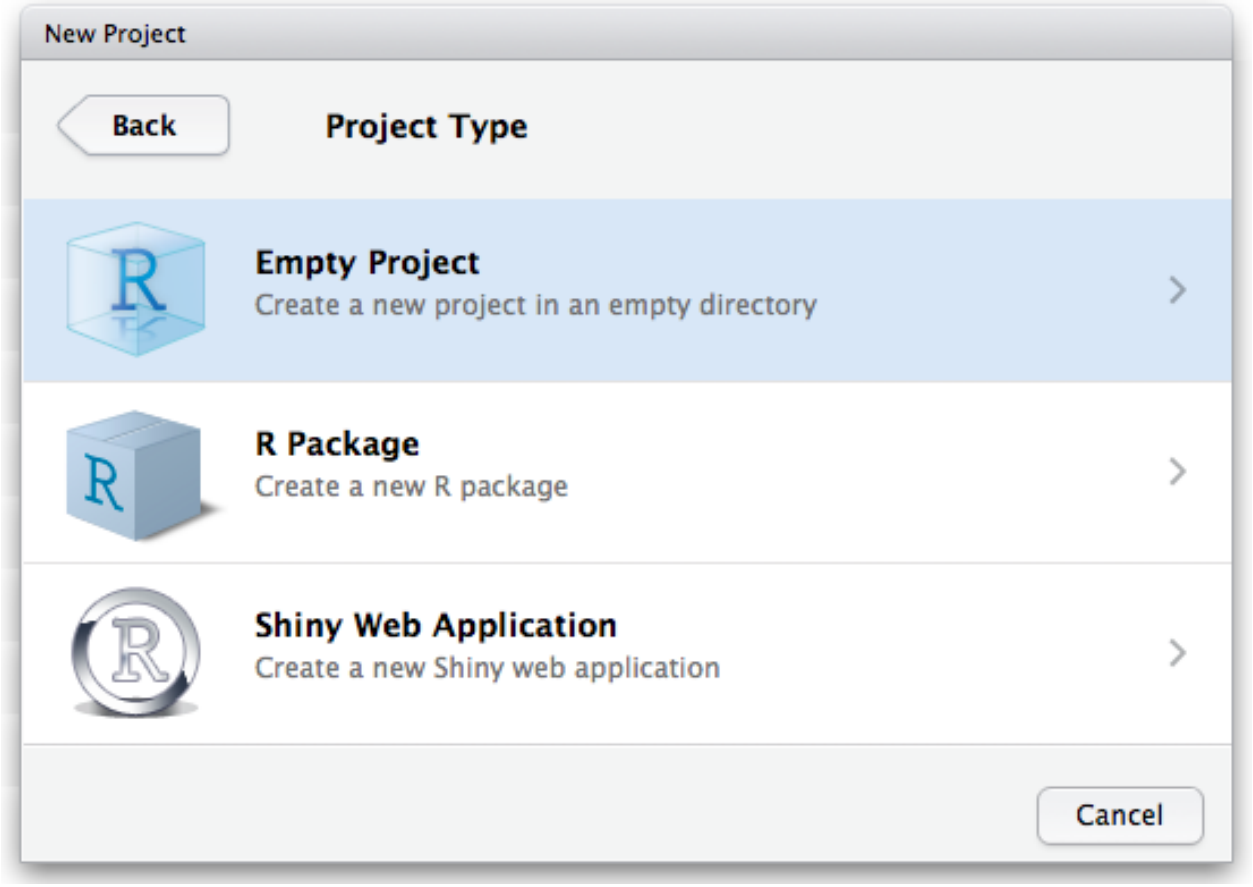
- You can use RStudio to organize a project
- RStudio allows you to create *Projects*
- Can be version-controlled
- Facilitates working with relative paths

# RStudio Project

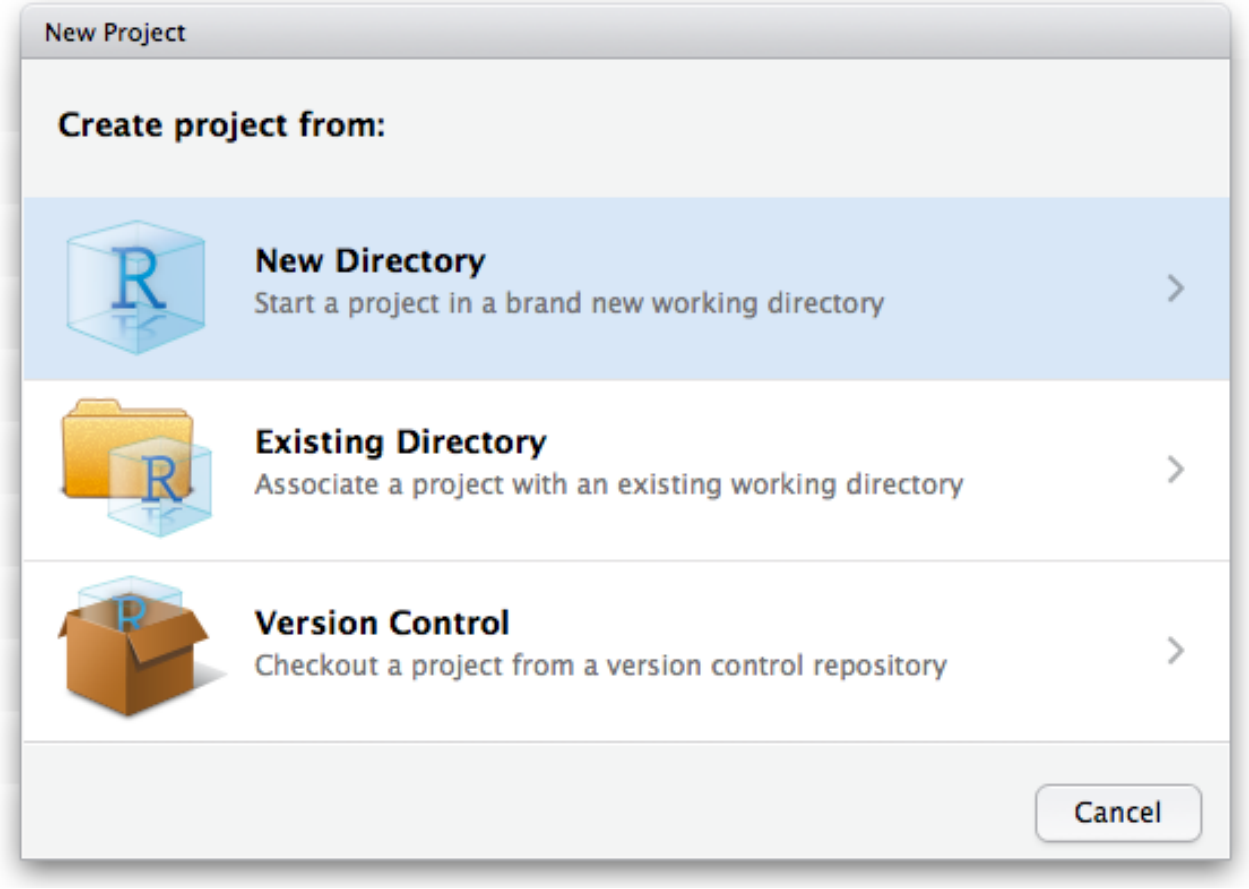



Start a **New Project**

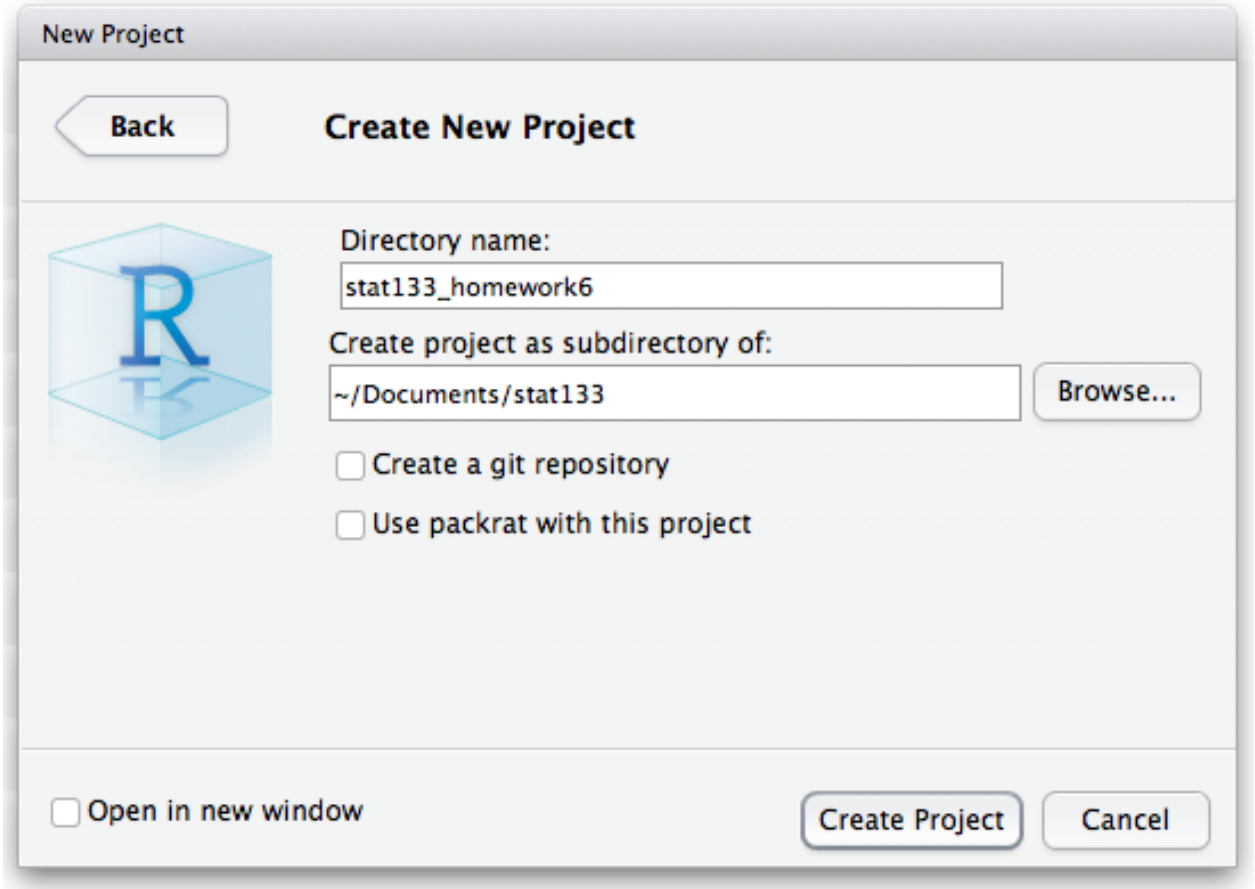
# RStudio Project



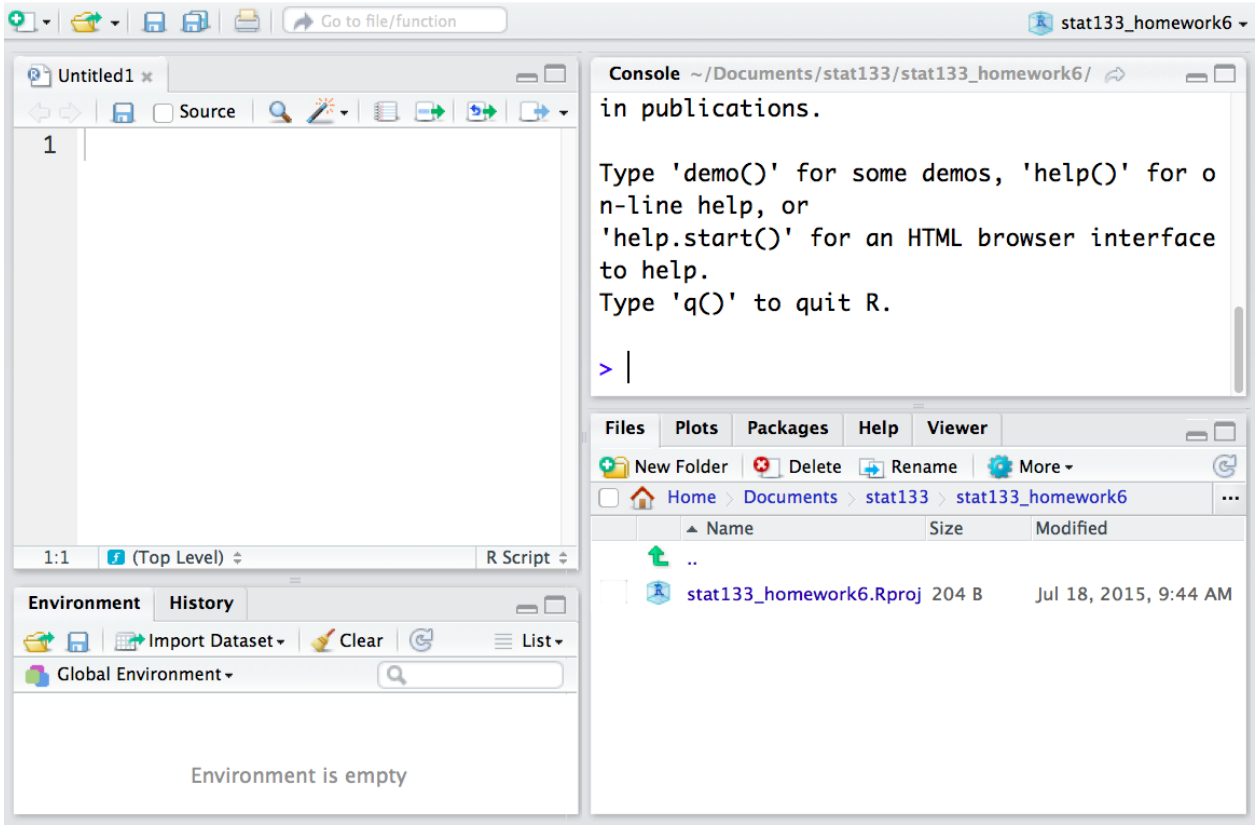
# RStudio Project



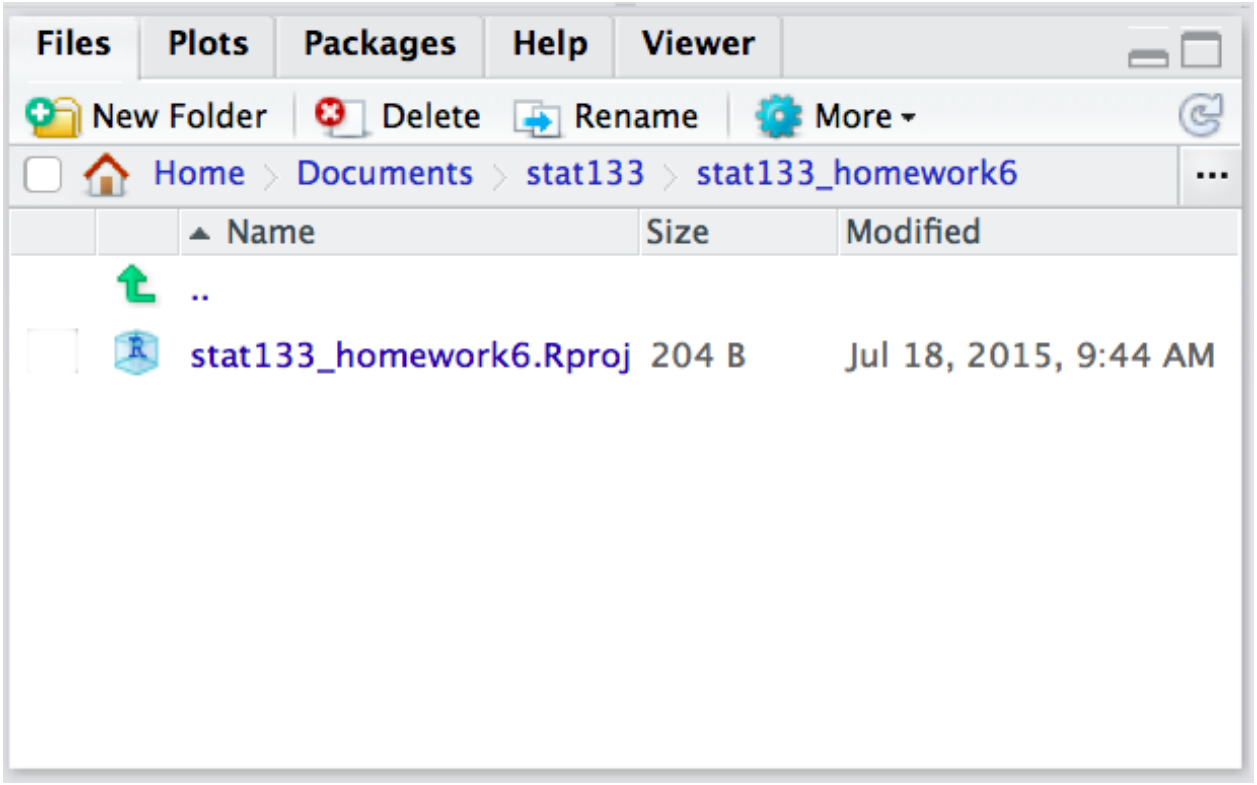
# RStudio Project



# RStudio Project

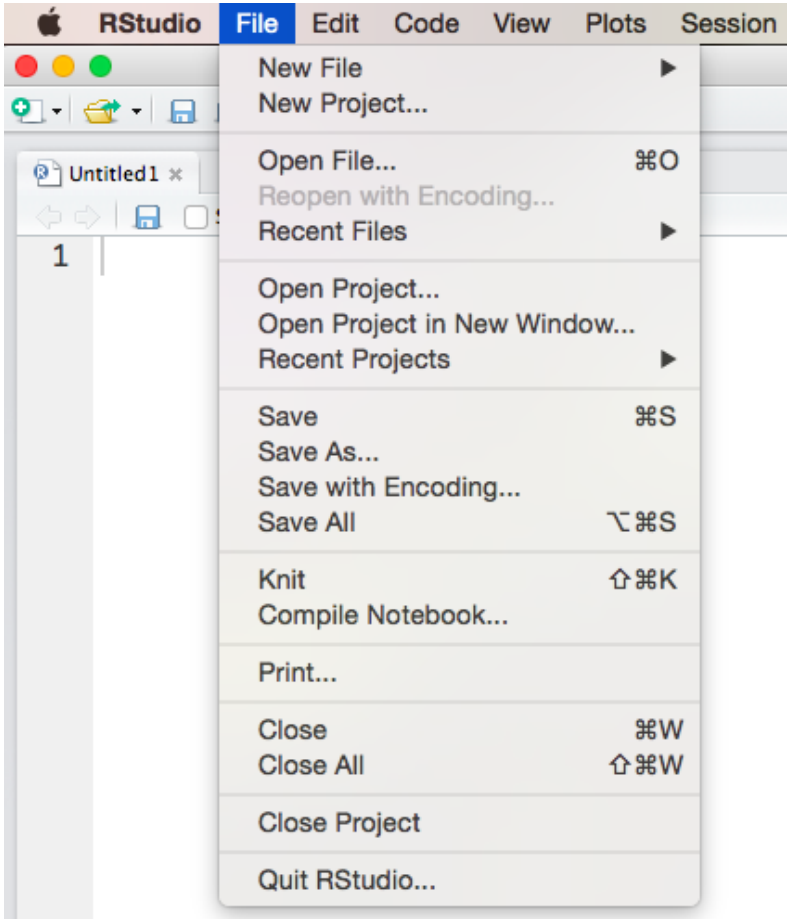


# RStudio Project




RStudio associates an `.Rproj` file to your Project

# RStudio Project




To close the Project go to the File menu bar and click `Close Project`

# RStudio Projects

Create an RStudio Project (you can use files of HW5)

- Add a subdirectory for the raw data
- Add a directory with the clean data sets
- Add an R script
- Add an Rmd file
- Knit the document (either as HTML or pdf)

# Shell for Windows

For those of you using Windows, you'll need to install either:

- **Git Bash**
  https://msysgit.github.io/
- **PowerShell** (part of the Windows Management Framework 4.0)
  https://www.microsoft.com/en-us/download/details.aspx?id=40855