

# R – It's Not So Scary!

BCCHR TOG Study Group

Oct 30, 2019

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## **CONS:**

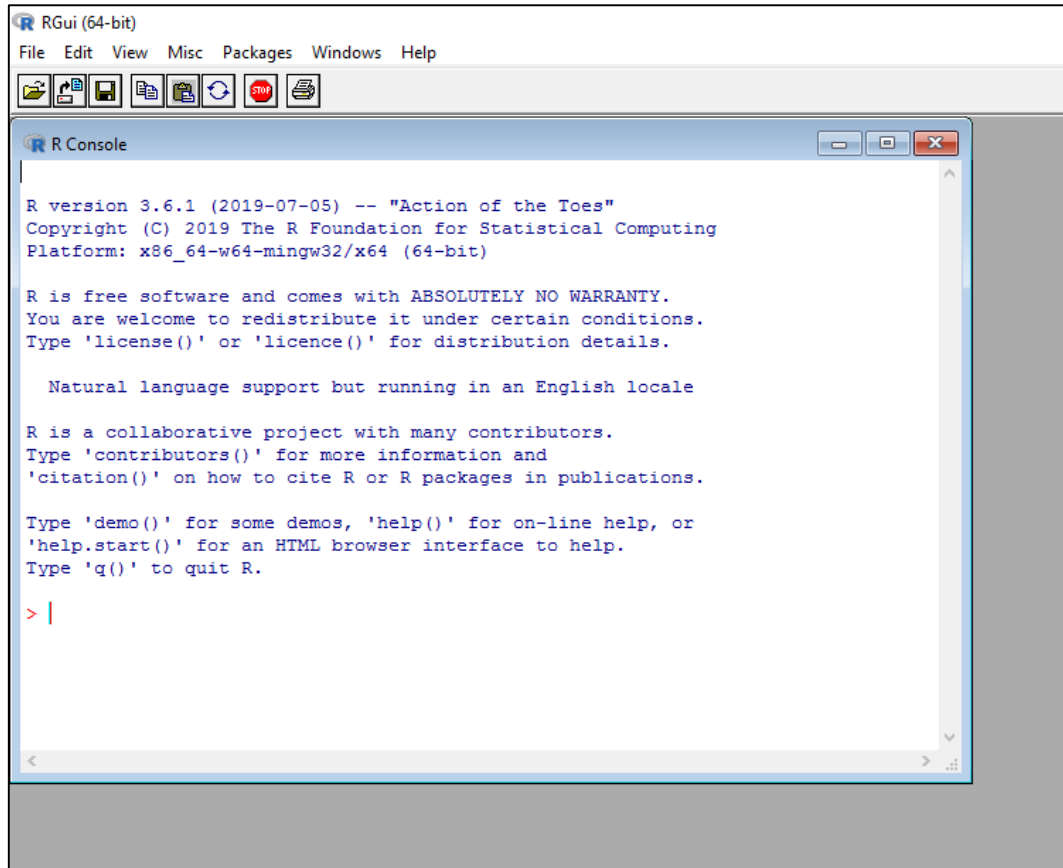
- Scary...
- Steep learning curve
- “Unintuitive”

# The good news

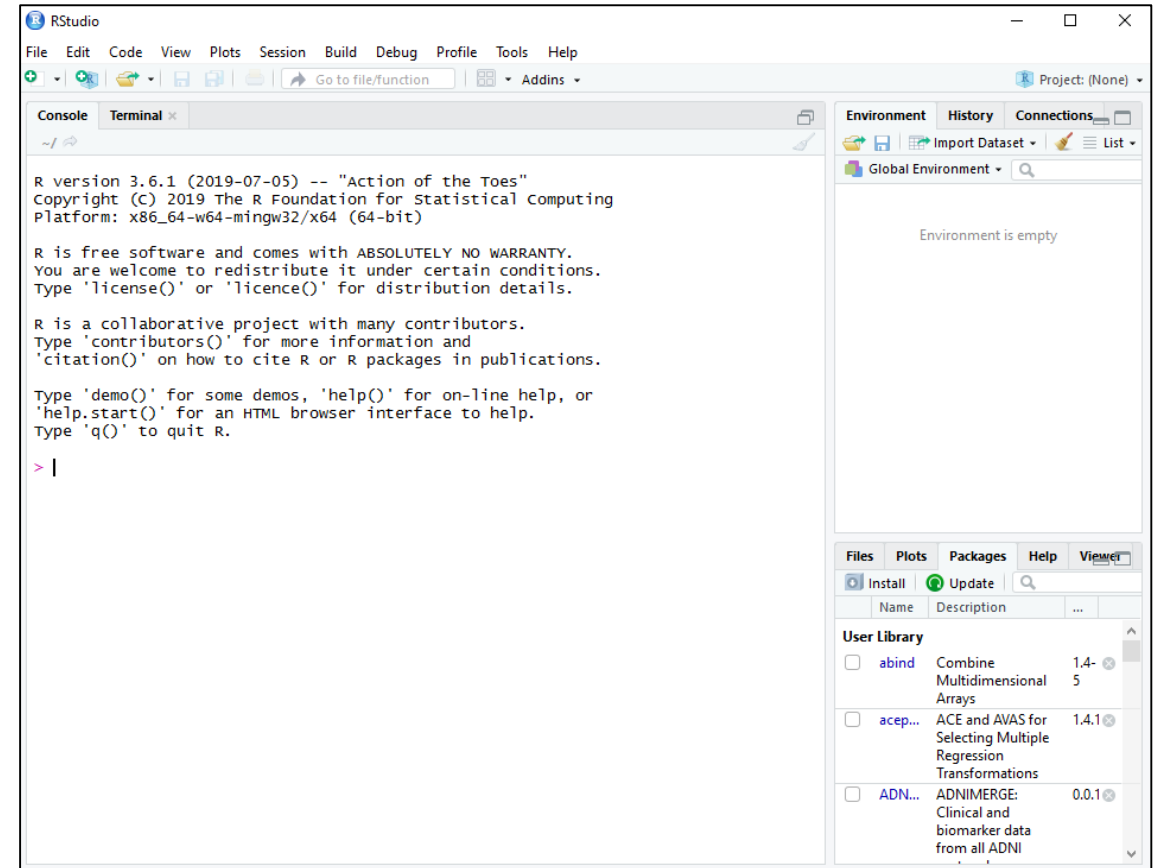


# Step 1: R versus R Studio

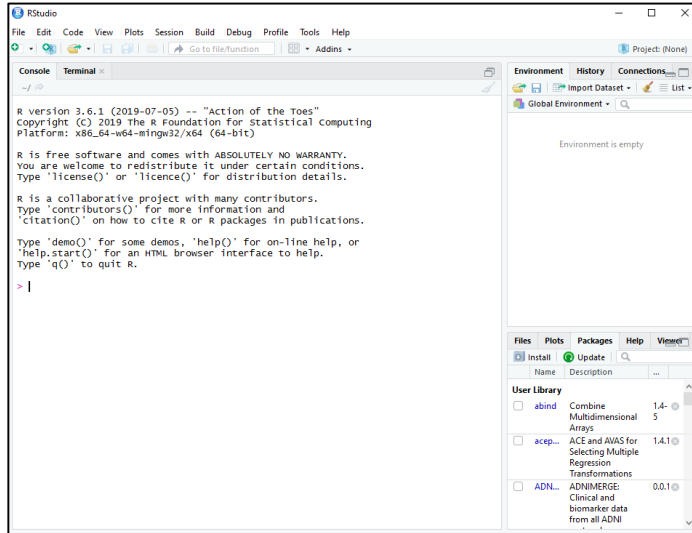
## R



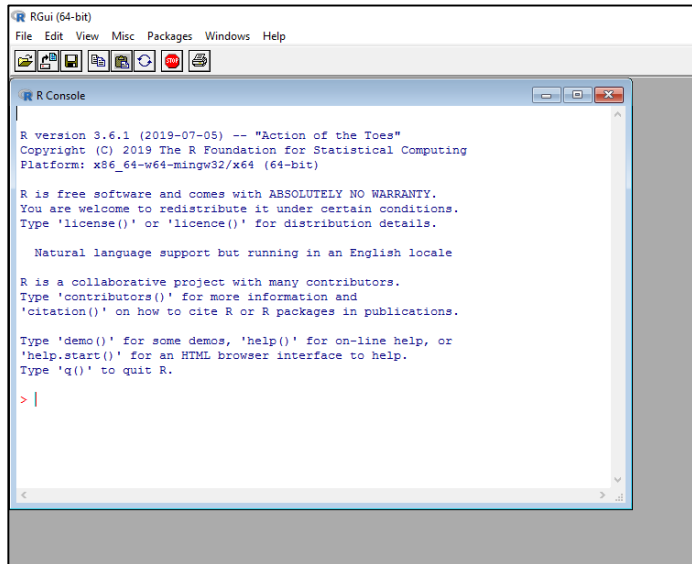
## R Studio



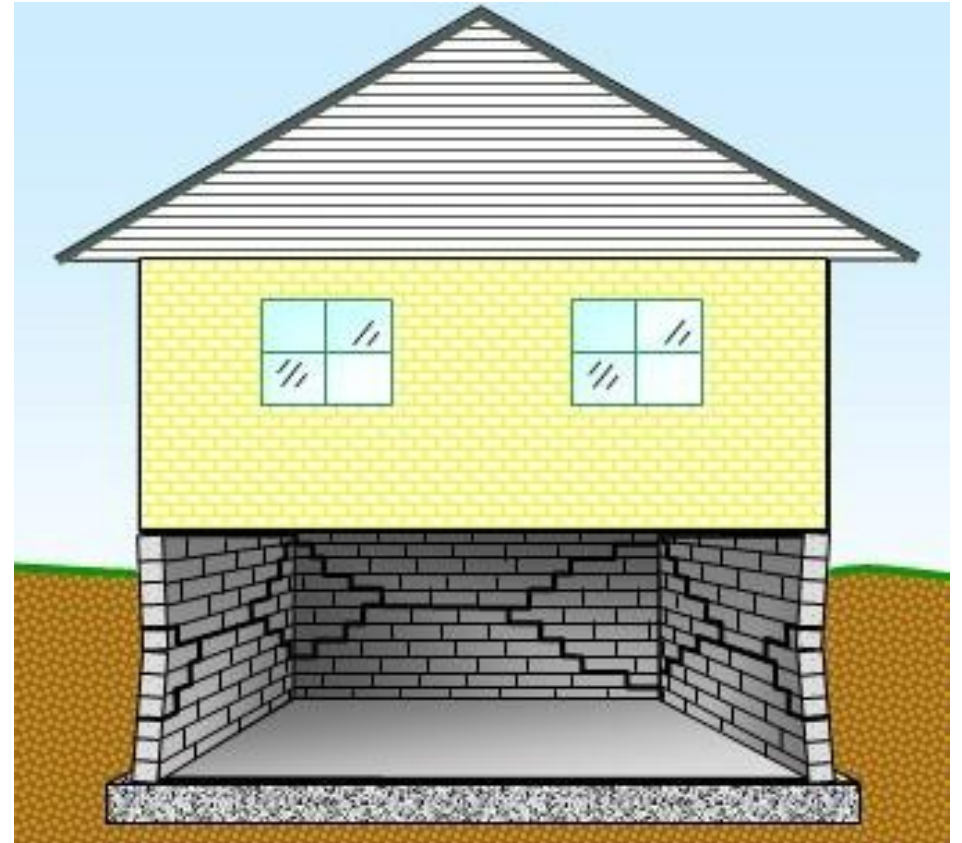
# Step 1: R versus R Studio



**R Studio**



**R**

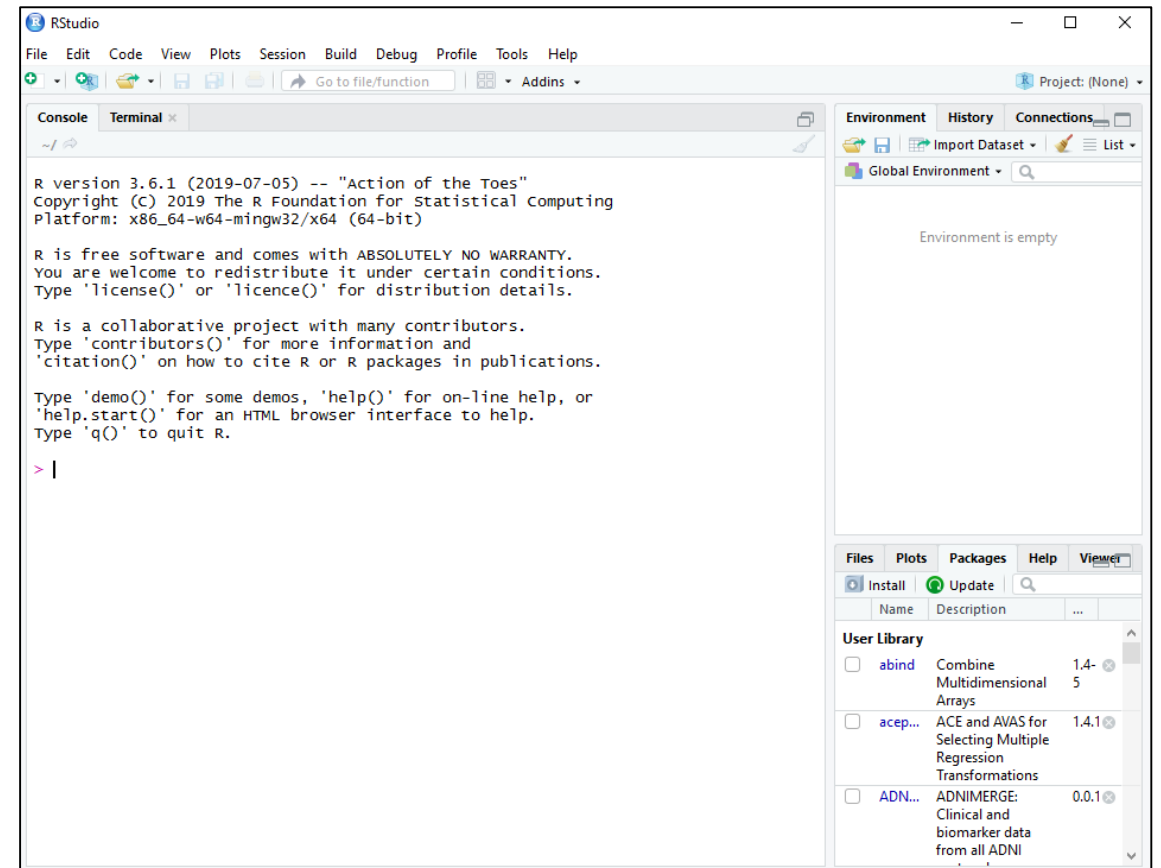


# Step 1: R versus R Studio

**YOU MUST  
DOWNLOAD R  
FOR R STUDIO  
TO WORK**

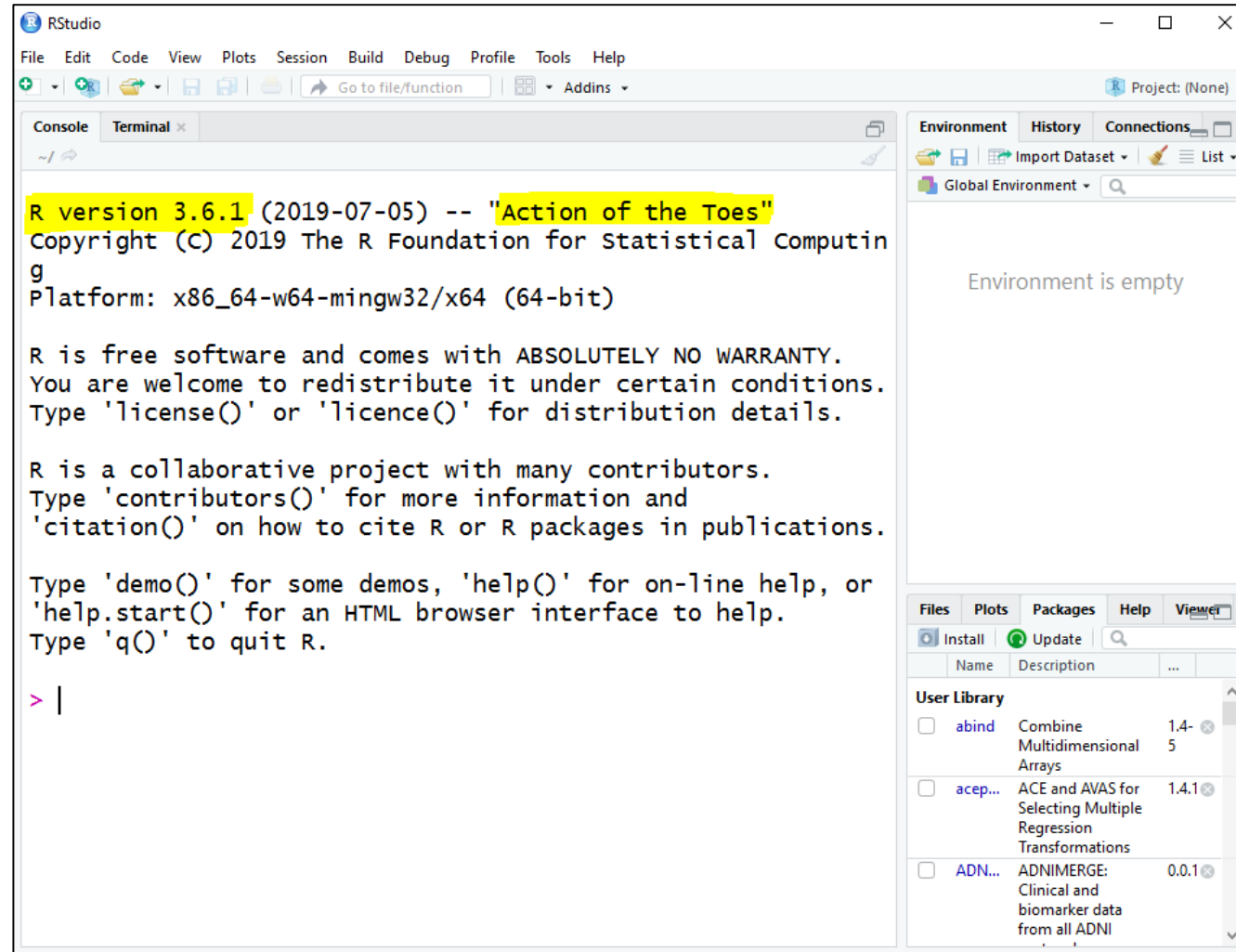
(but you'll probably never use R directly)

## R Studio





# Fun fact!



The screenshot shows the RStudio interface. The console window displays the R startup message, which includes the version number, copyright information, platform details, and usage instructions. The text is as follows:

```
R version 3.6.1 (2019-07-05) -- "Action of the Toes"
Copyright (C) 2019 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

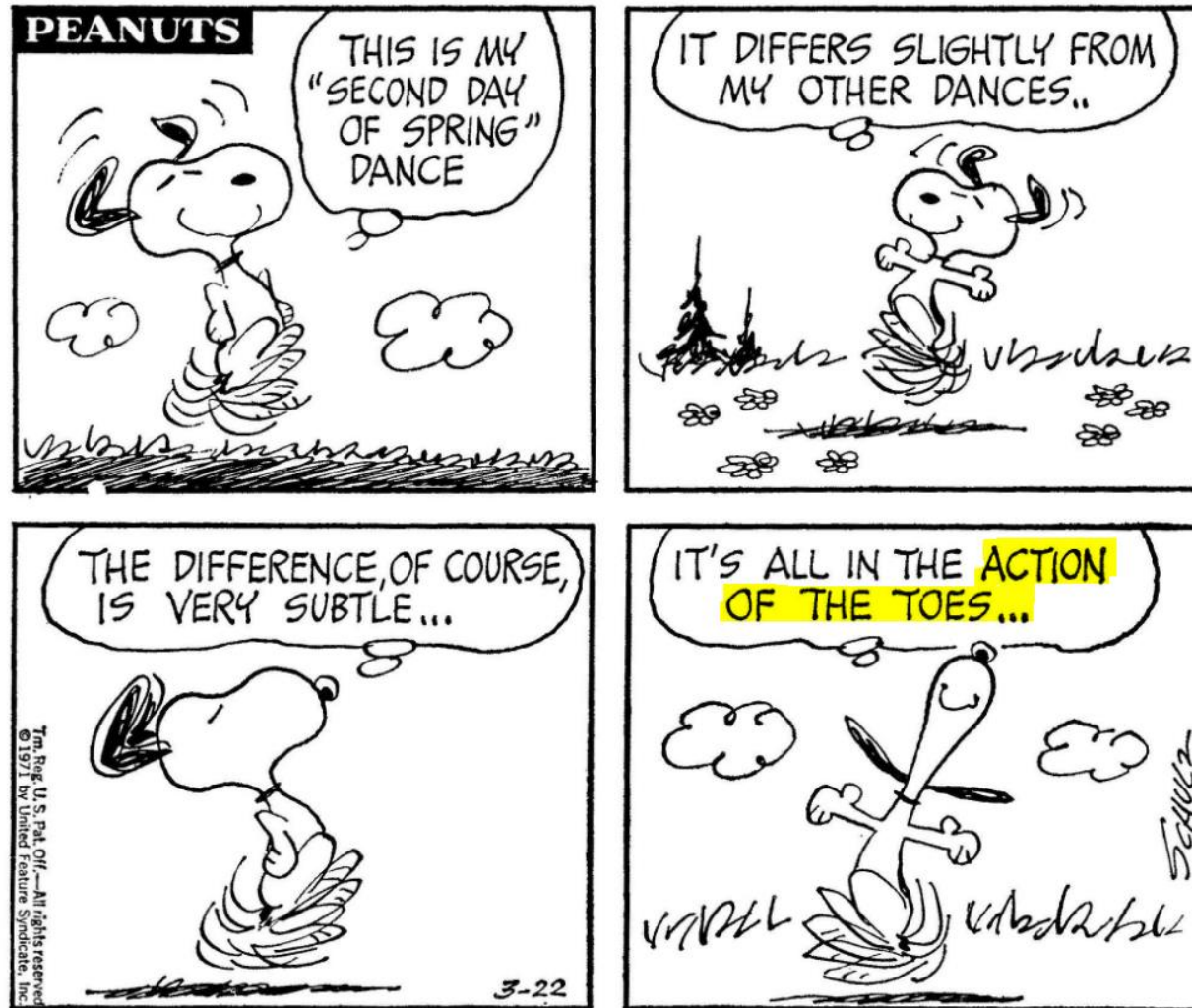
Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> |
```

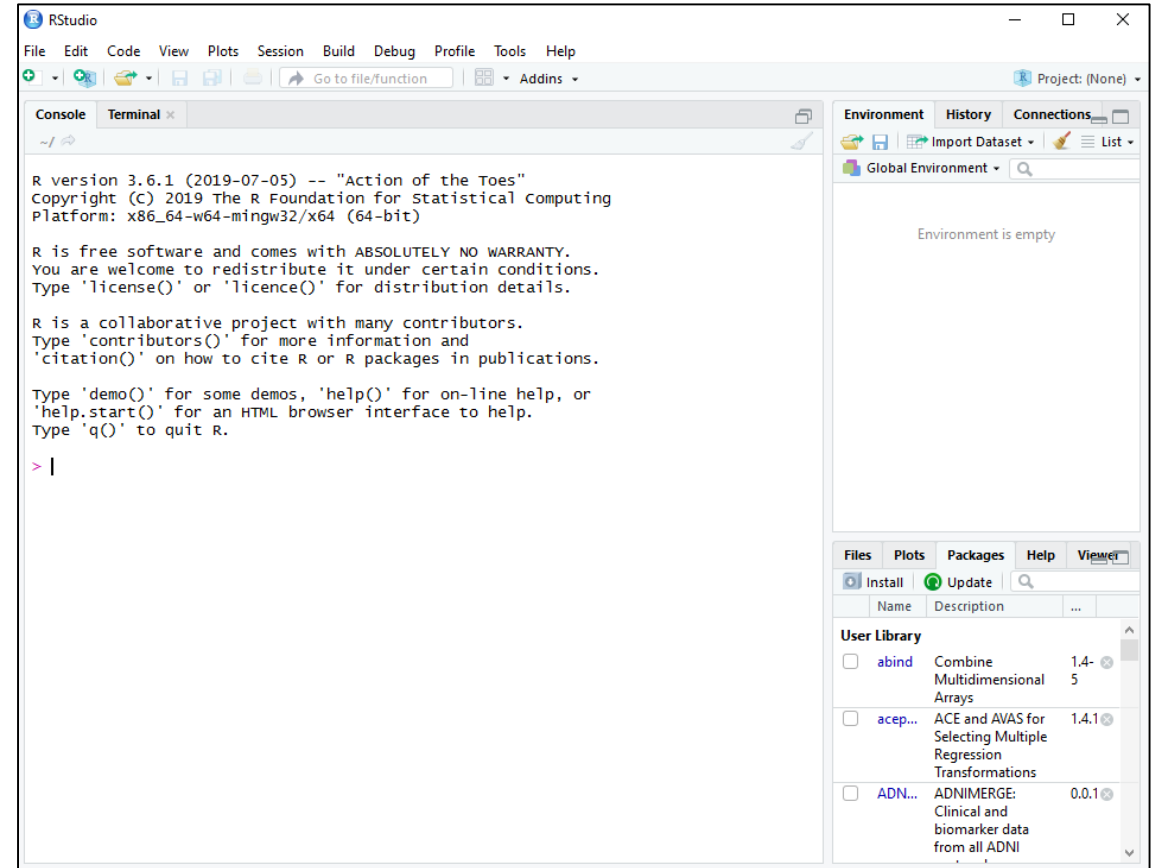
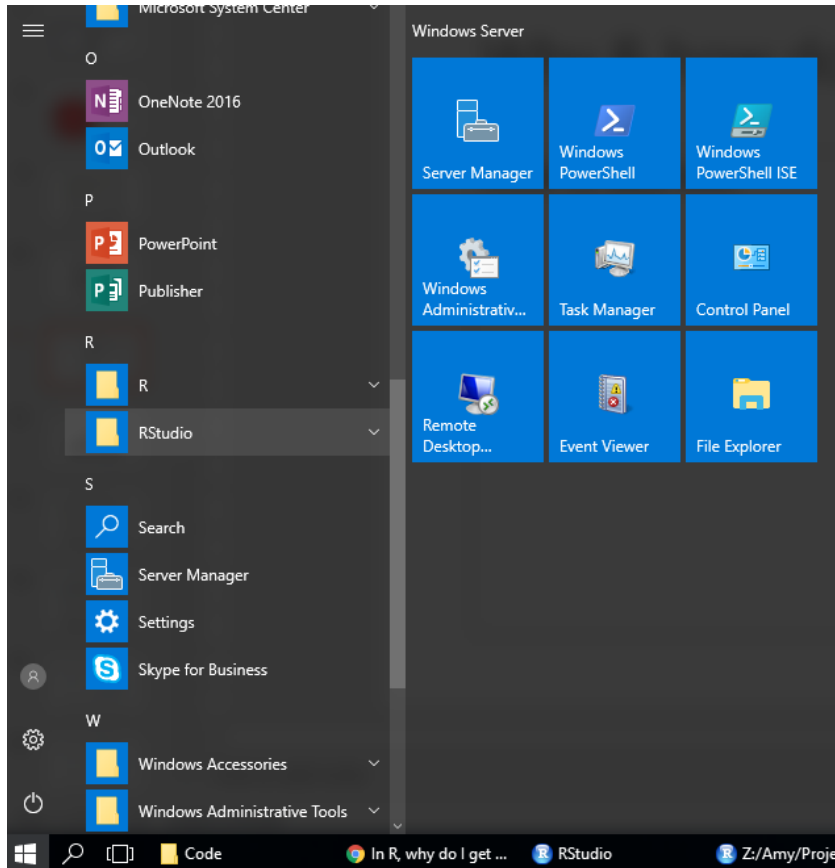
The right-hand pane of RStudio shows the Environment, History, and Connections tabs. The Environment tab is active, displaying "Global Environment" and "Environment is empty". The bottom-right pane shows the Files, Plots, Packages, Help, and Viewer tabs. The Packages tab is active, displaying a list of installed packages:

Name	Description	Version
abind	Combine Multidimensional Arrays	1.4-5
acep...	ACE and AVAS for Selecting Multiple Regression Transformations	1.4.1
ADN...	ADNIMERGE: Clinical and biomarker data from all ADNI	0.0.1

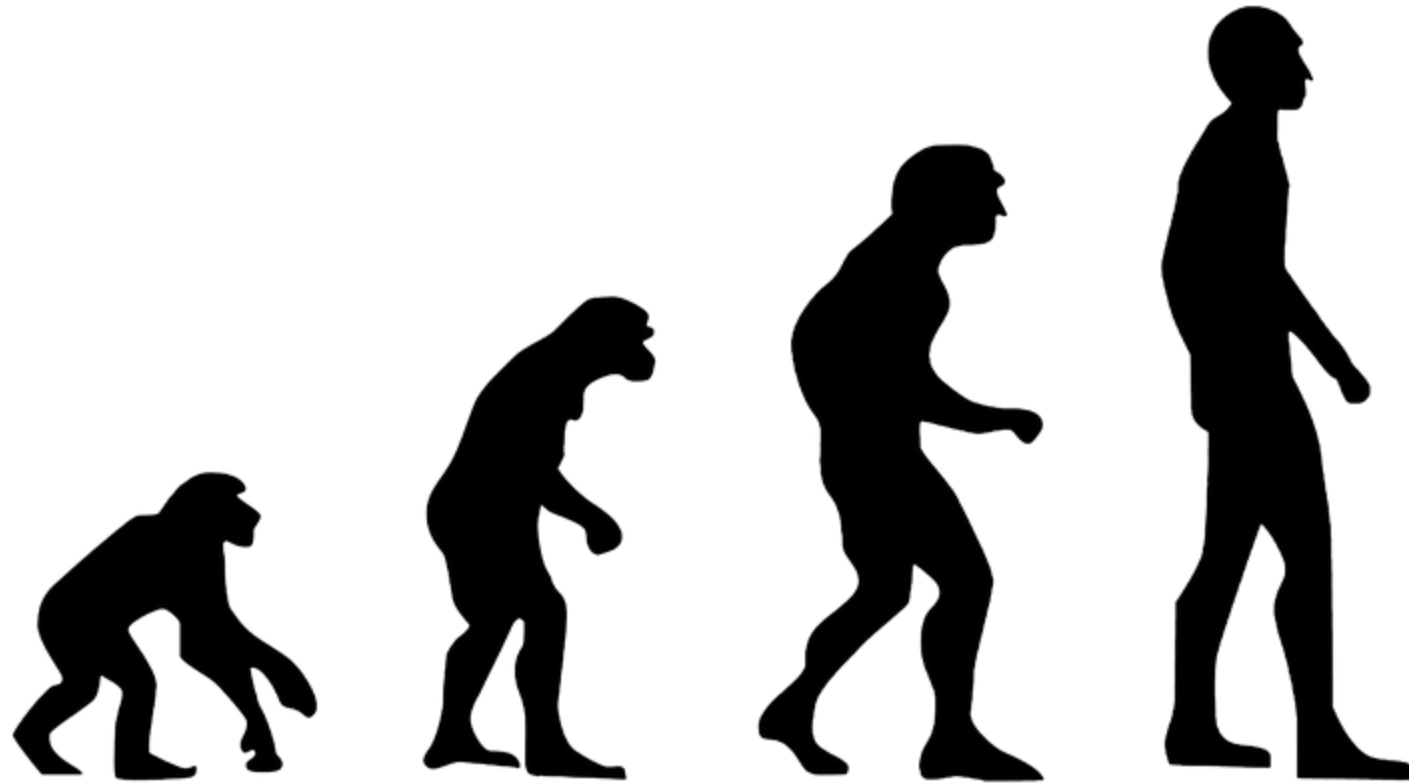
# Fun fact!



# Why & how do I use R Studio?

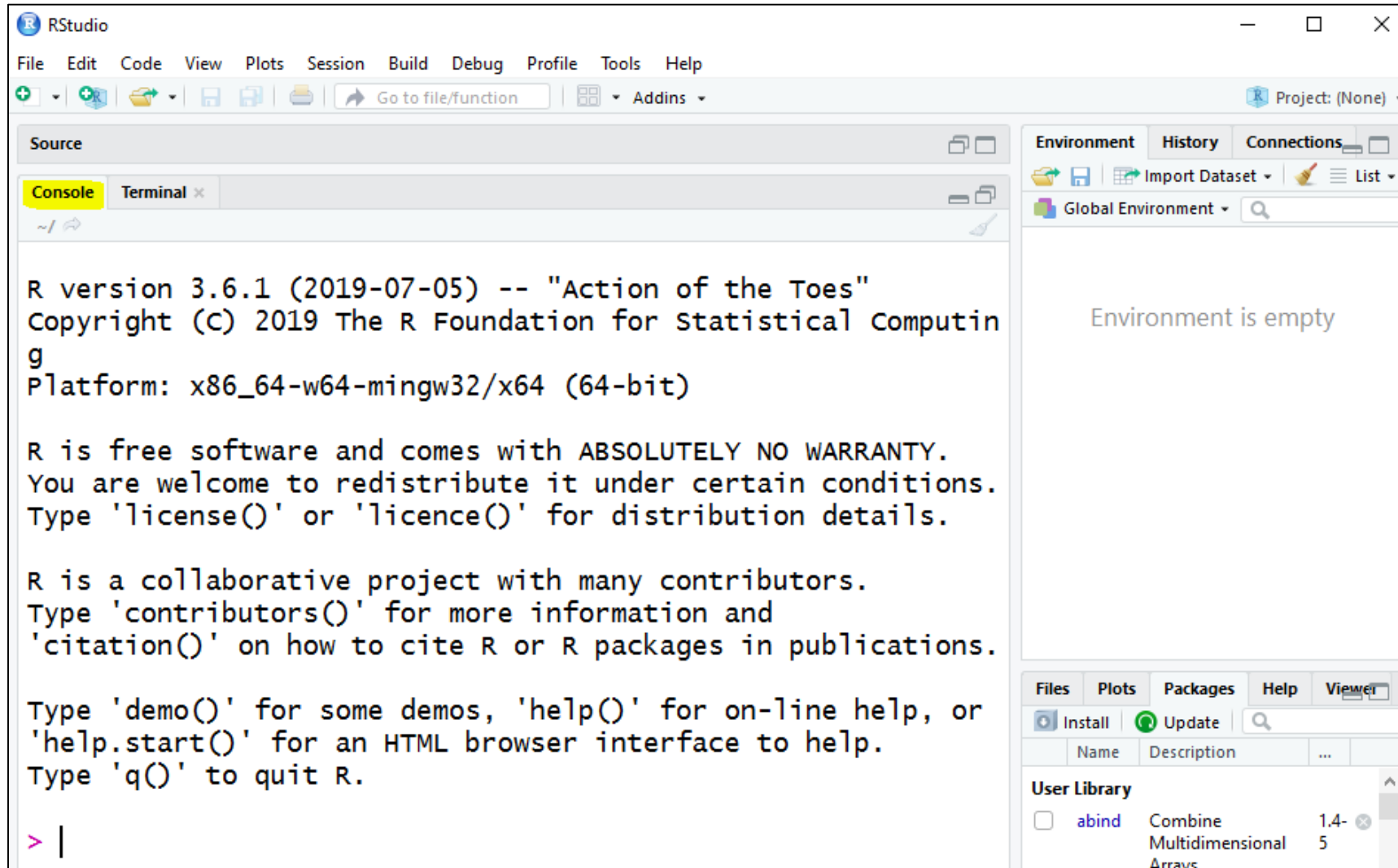


# How to save your work

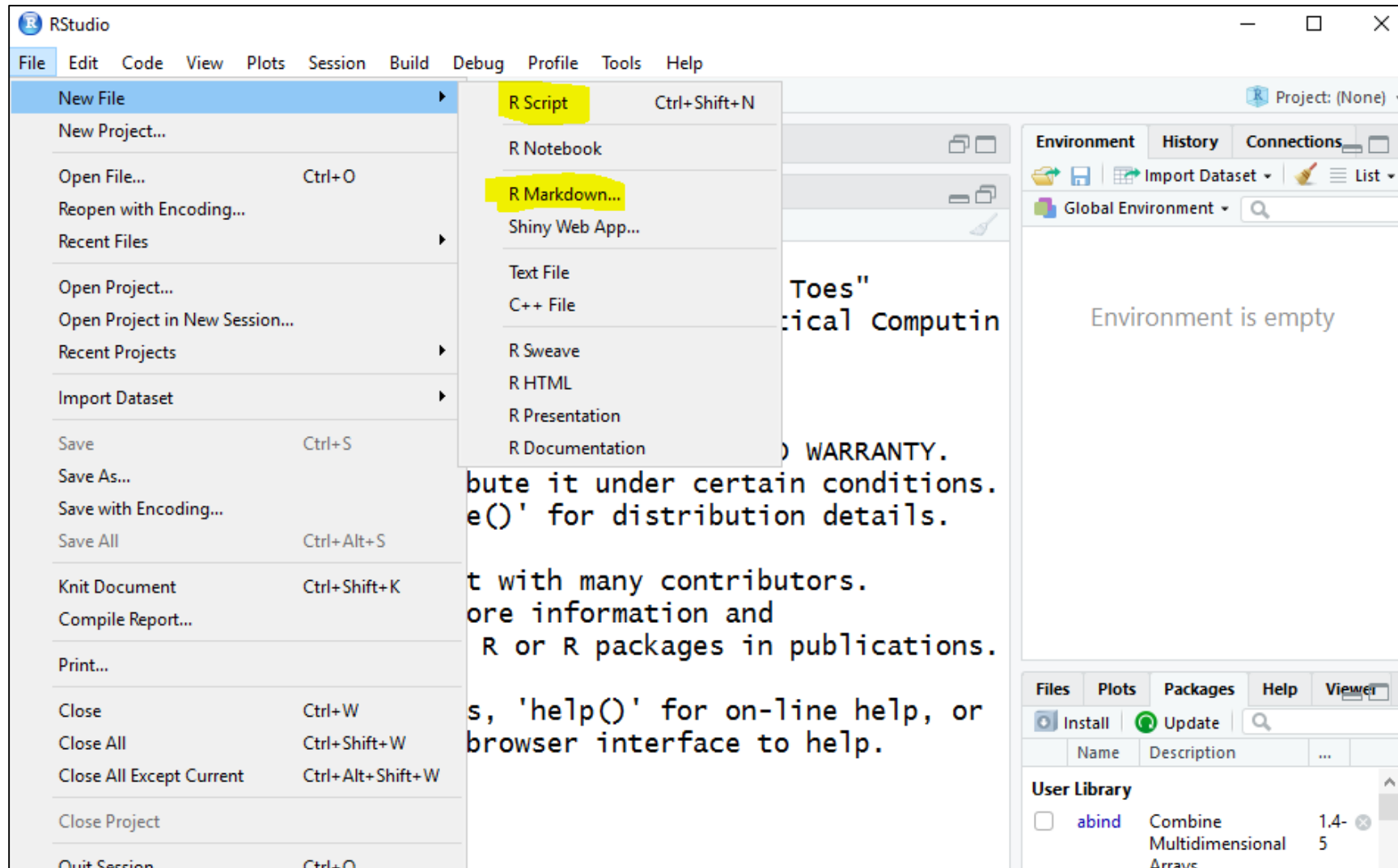


**Console**      **R Script**      **R Markdown**

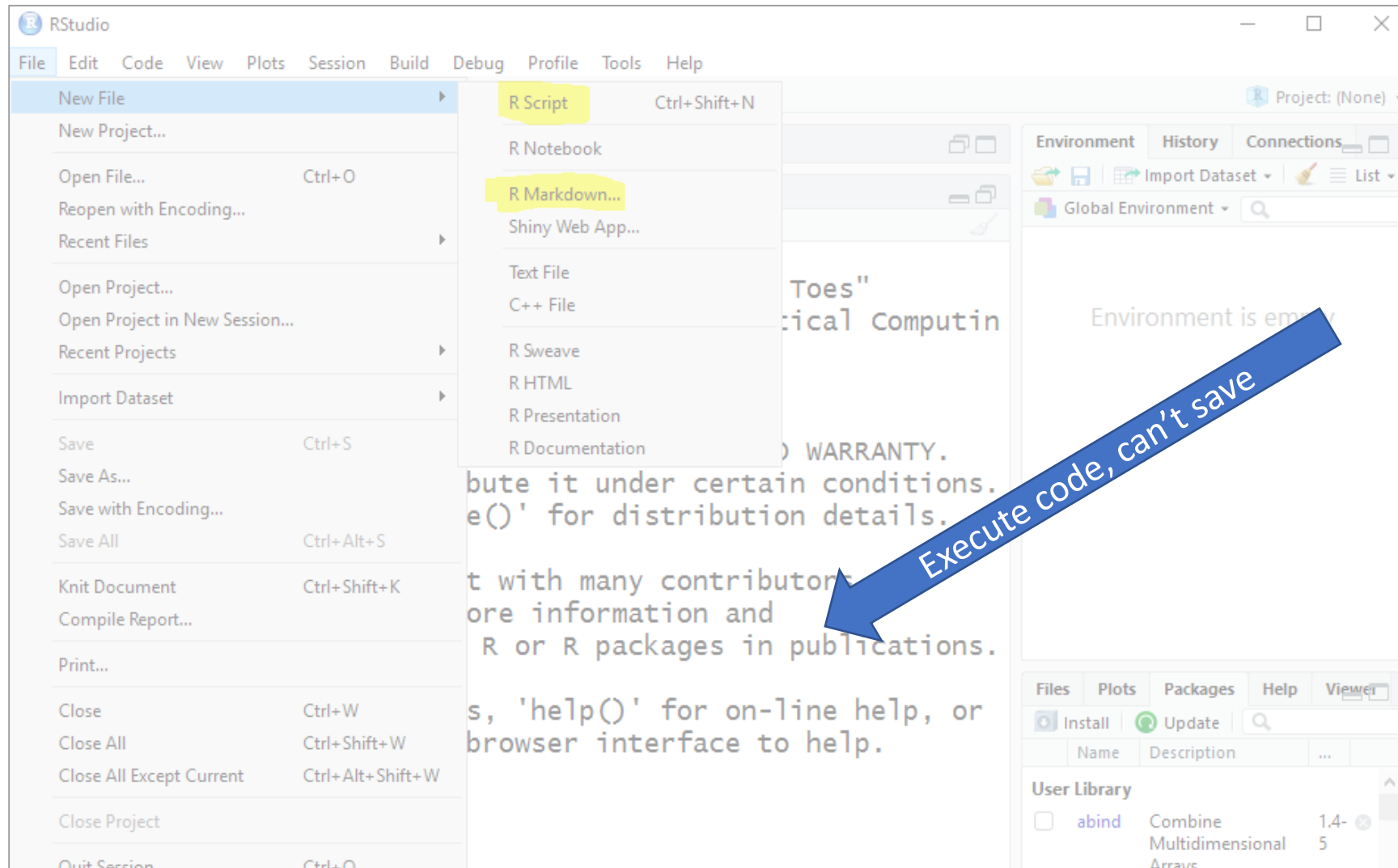
# Console, R Script or R Markdown?



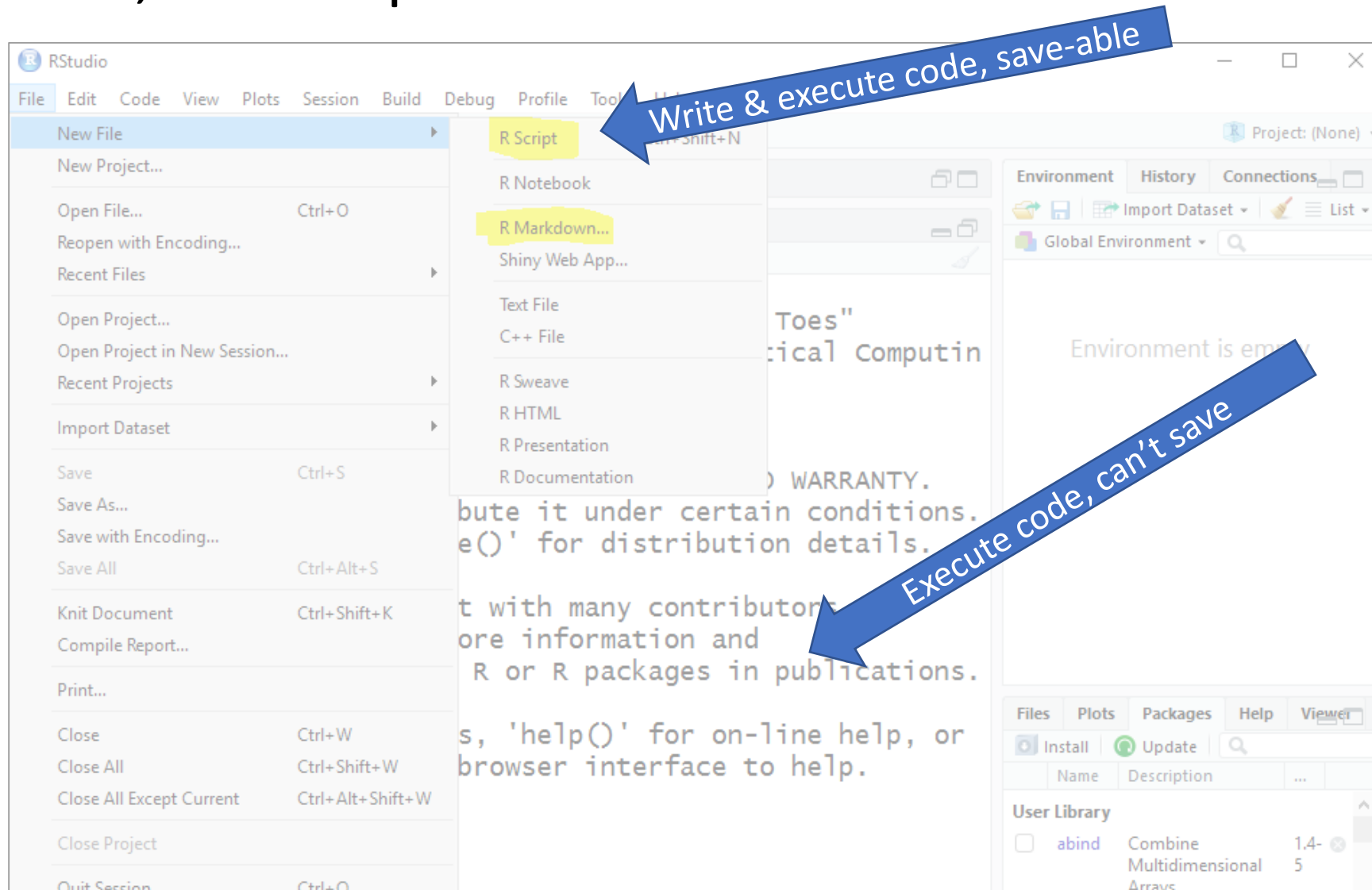
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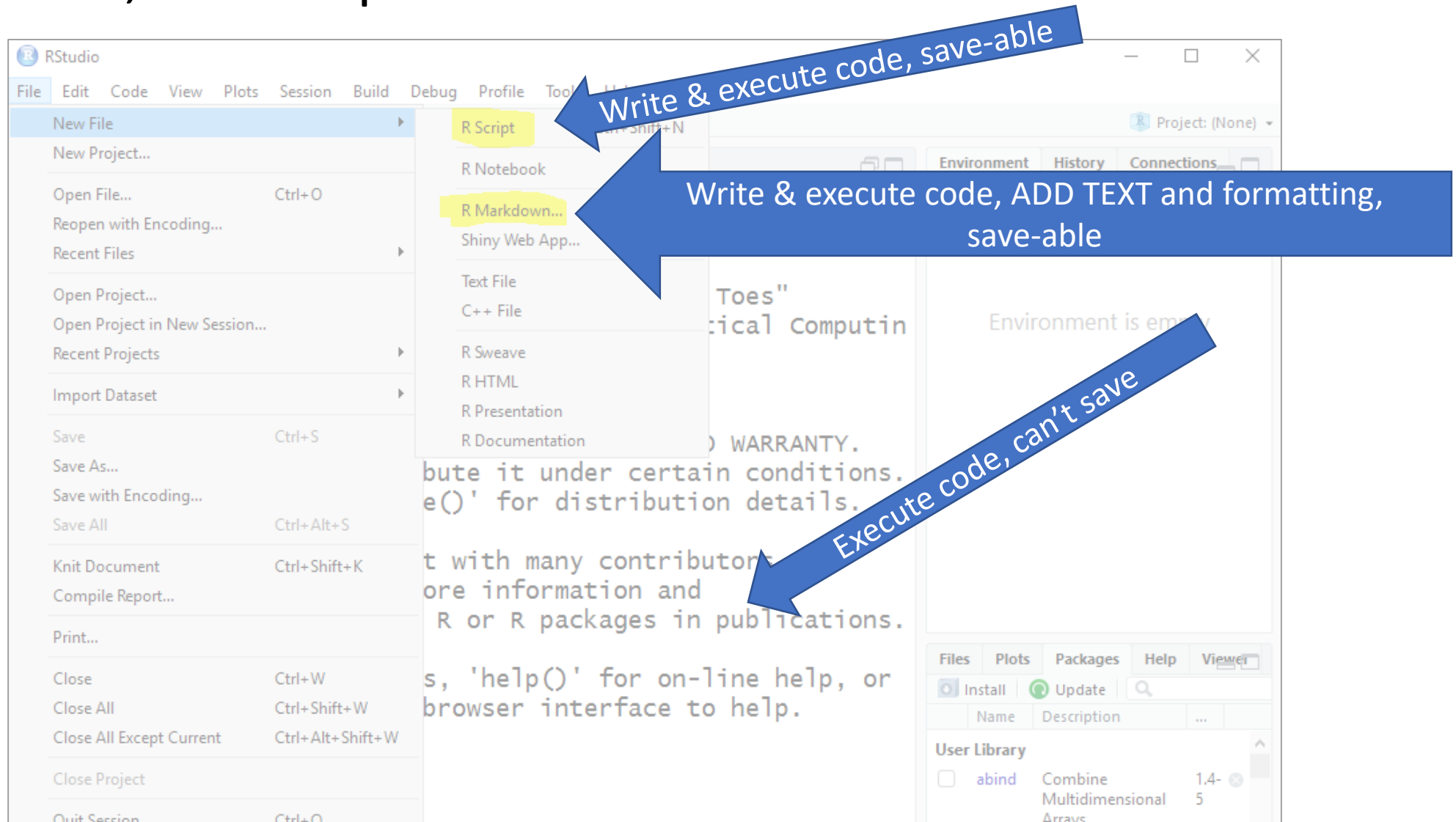


# Console, R Script or R Markdown?





# Console, R Script or R Markdown?



Now...the scary part!



Example!

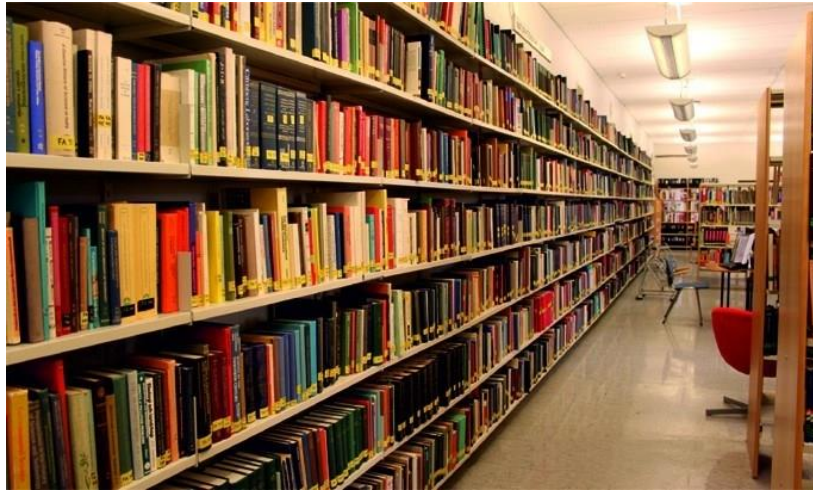
bit.ly/331qGG7

File → Download → Save as CSV

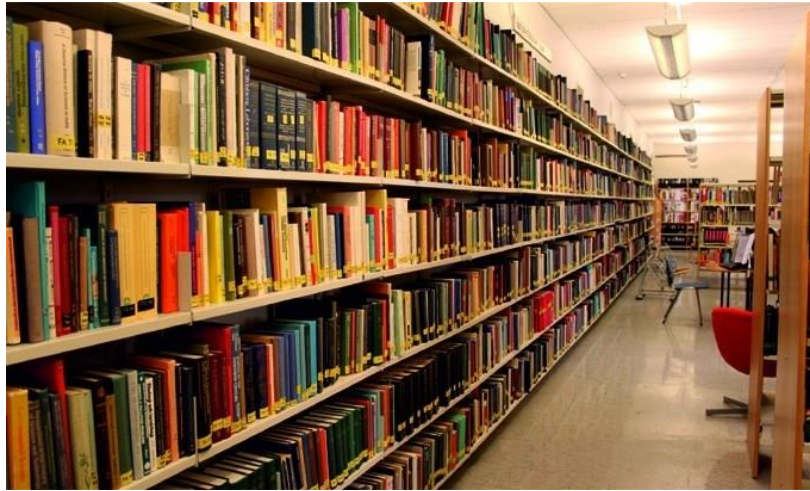
# Generating a New Markdown:

- Open up R, create a new markdown file
- **Delete** default template **below the header!**
- Create first code chunk
  - Code → Create Chunk
  - Control + Alt + I
- GENERAL STRUCTURE:
  - Grey = code
  - White = text
- Running code chunks

# Analogy - loading objects



# Analogy - loading objects



You need to pull the  
book out of the stacks  
before you can work  
with it!

# R Markdown Recommendations:

1. Use informative file names (*not* Untitled\_xgfgsdhhsf.Rmd)
2. Load packages and data in a single chunk at the beginning
3. Use chunks like paragraphs: new topic = new chunk
4. Add textual descriptions and COMMENT your code
5. Knit at the end of every session/day

Inspo:

Dr. Jenny Bryan, *Happy Git and GitHub for the useR*,  
R-bloggers.com, *Beyond Basic R Introduction & Best Practices*

# Some general comments...

- Google your errors!
- Don't save your workspace!
- Most of the time, R packages have handy guides!



Download R and R Studio:

