Quantitative Sociological Analysis

Statistical Software R with Rstudio Download Instructions and Tutorial

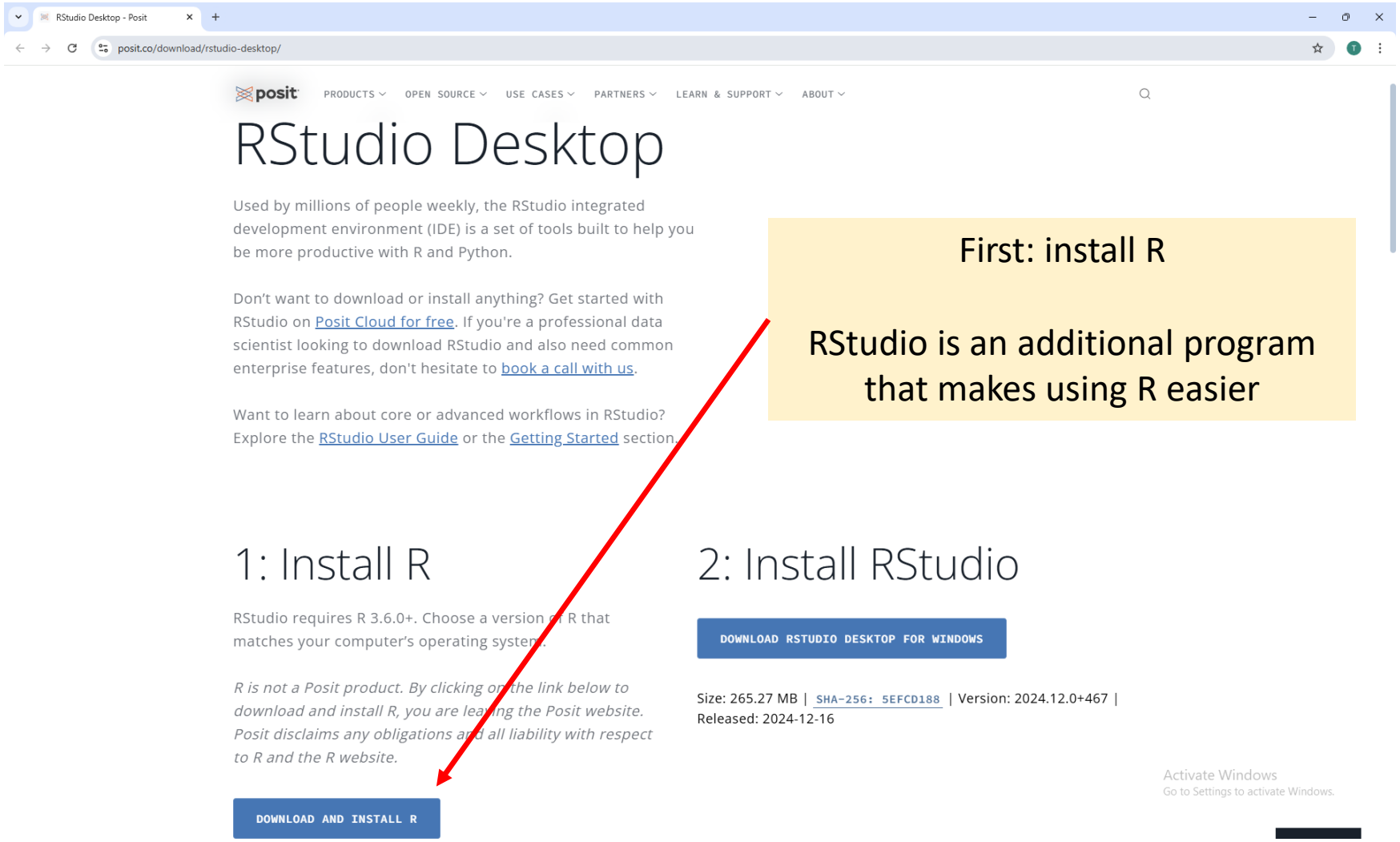
Spring 2025

R, what is it?

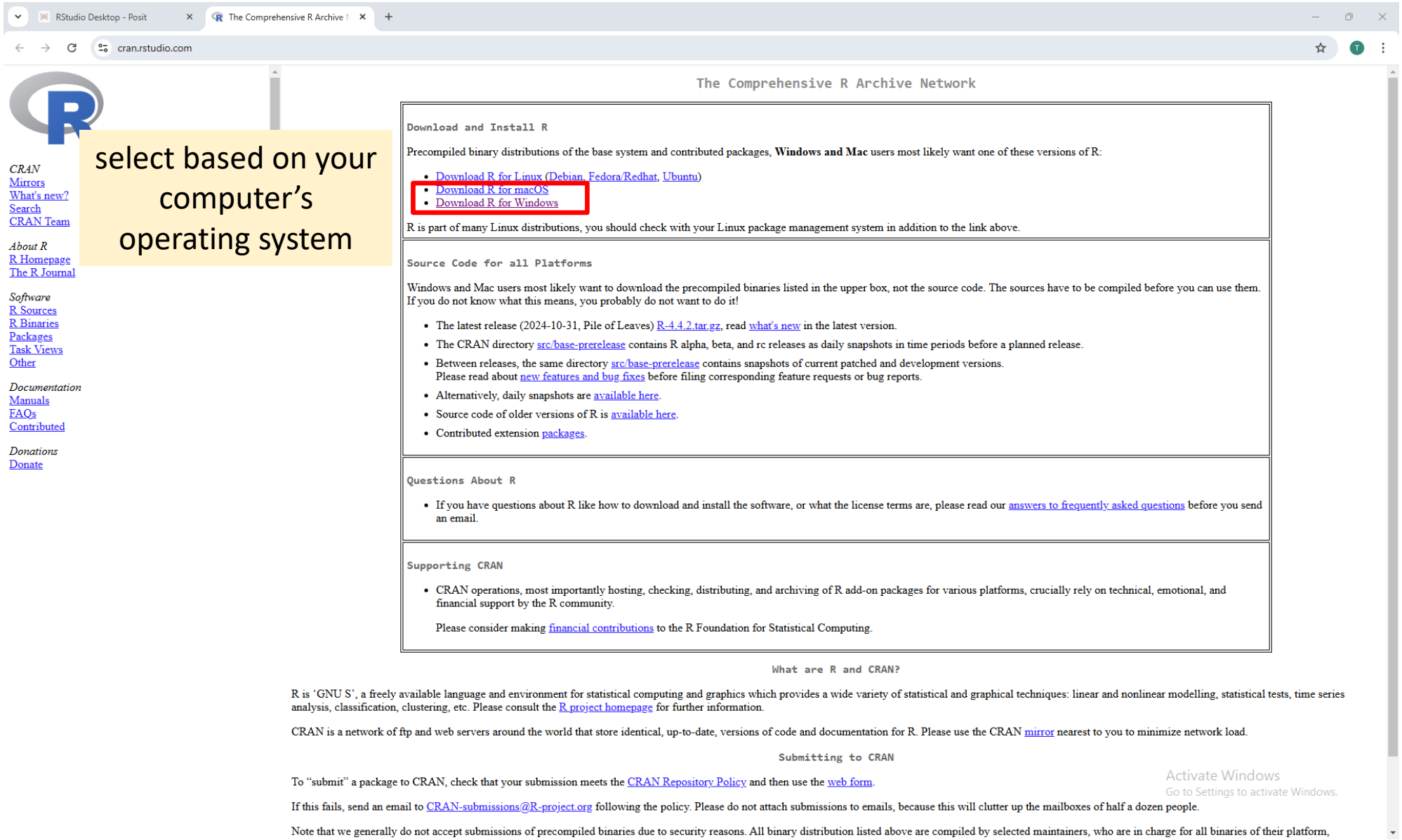
- R is an environment & language, software, for statistical computing & graphics
- Environment: collection of programs to perform tasks
- Language: how the environment communicates with a computer
  - we will tell R how to perform tasks

Download R and RStudio

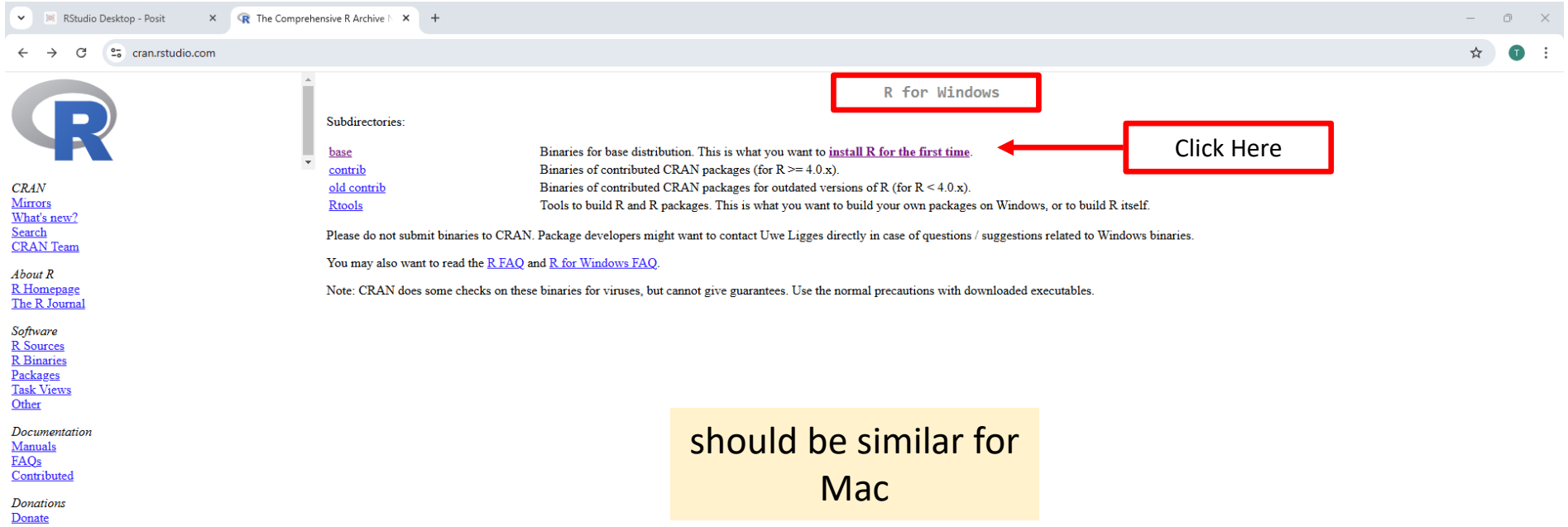
- https://posit.co/download/rstudio-desktop/



Download R: Windows or Mac

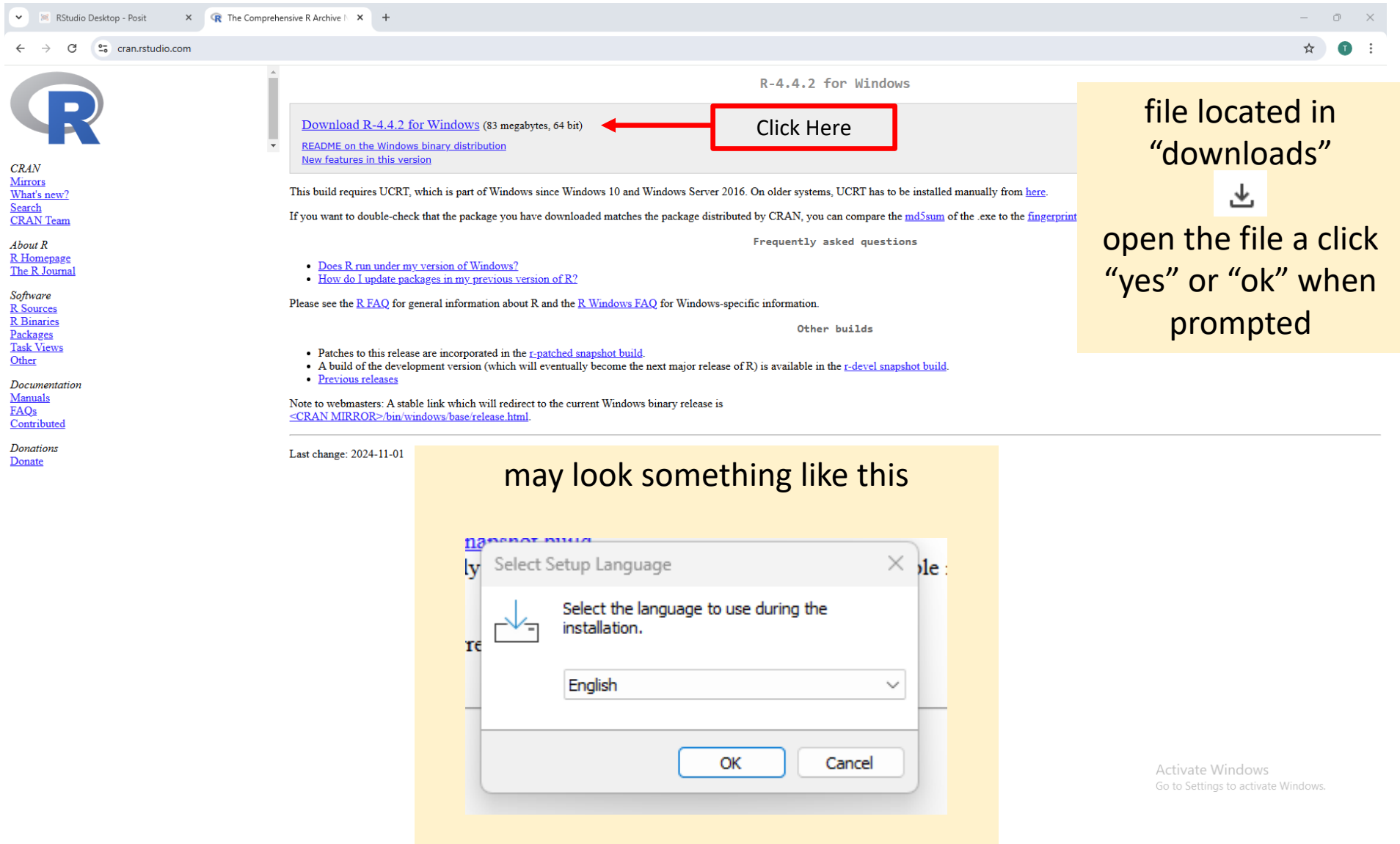


Download R: I have a Windows operating system



should be similar for Mac

Download R



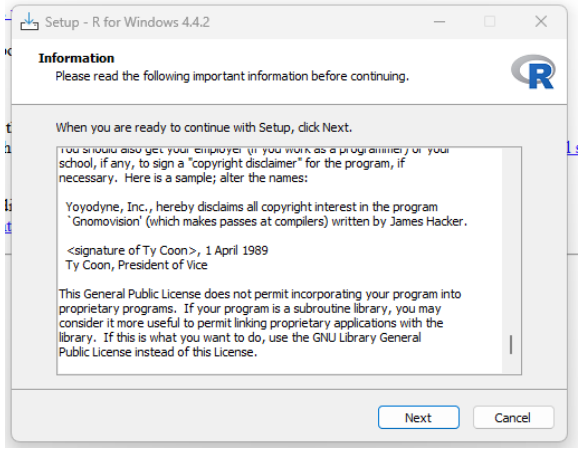
file located in “downloads”

open the file a click “yes” or “ok” when prompted

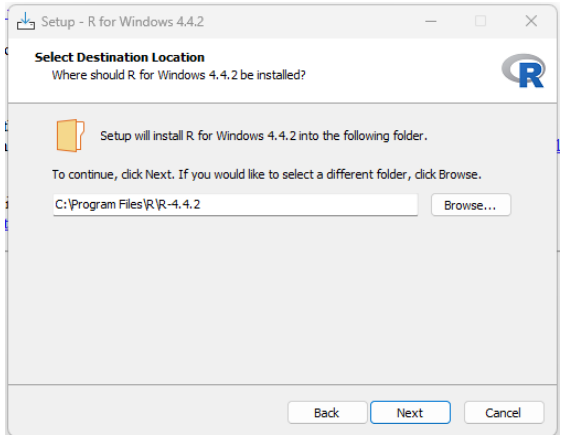
may look something like this

Download R

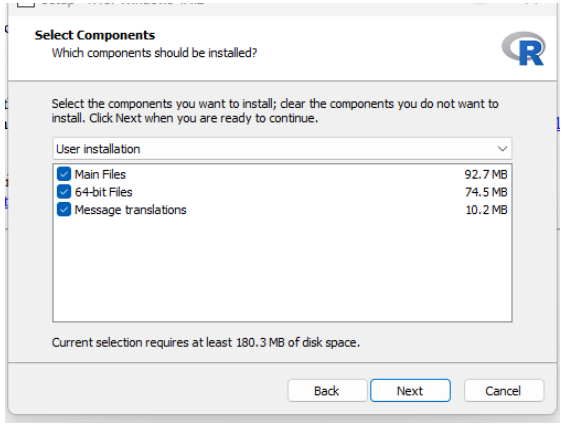
1. Click “Next”



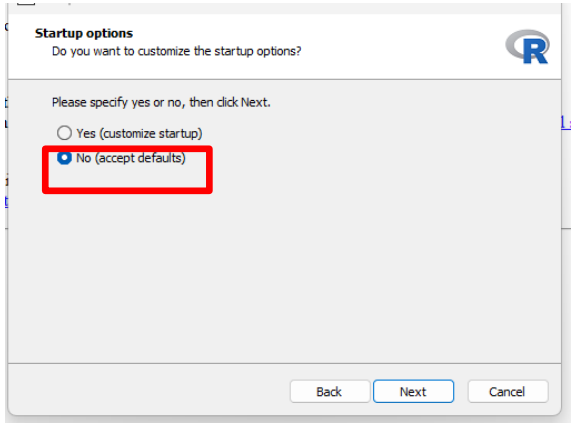
2. Click “Next”



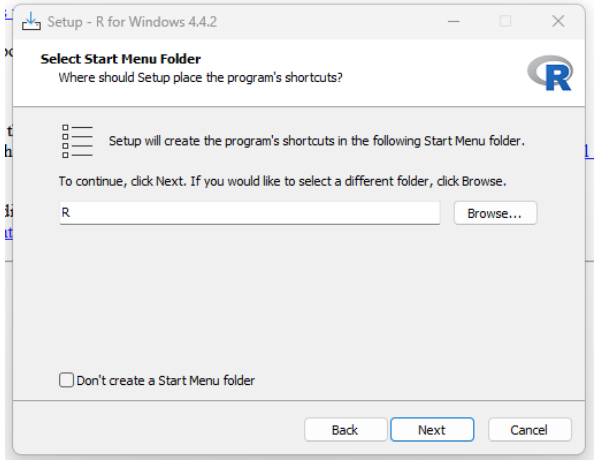
3. Click “Next”



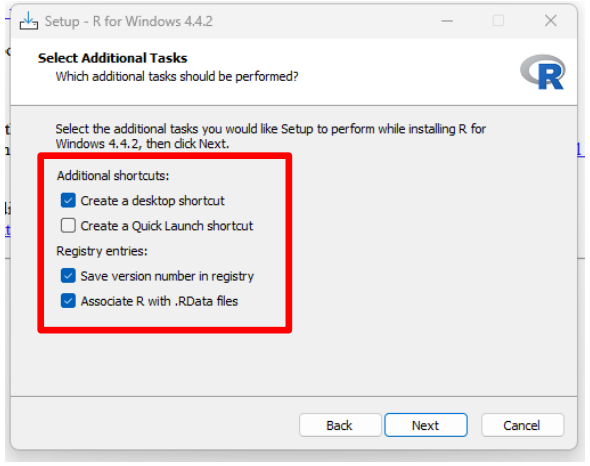
4. Click “Next”



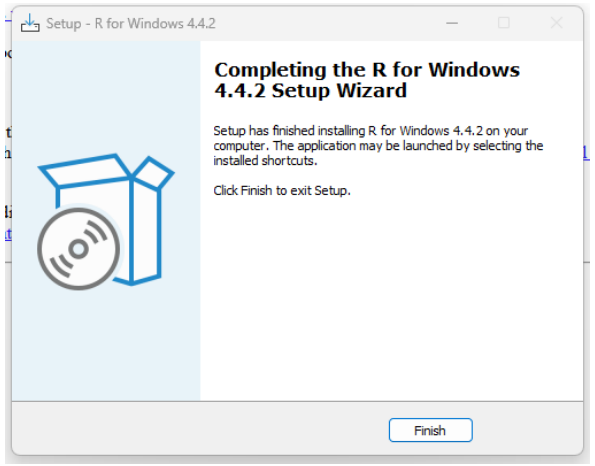
5. Click “Next”



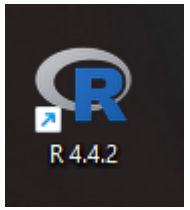
6. Click “Next”



7. Click “Finish”



R icon should now appear on desktop

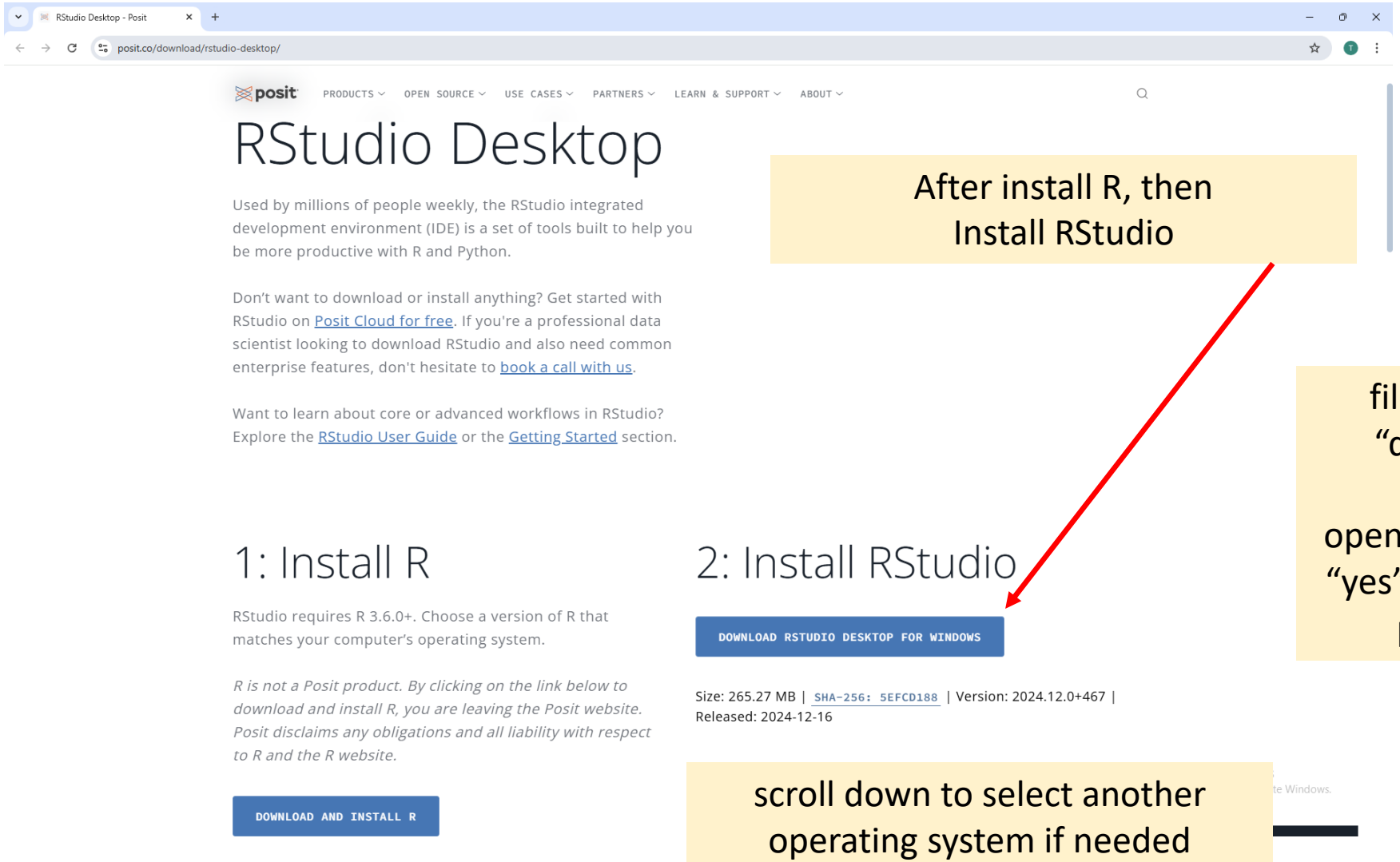


After successfully installing R

- click on the same link again to download and install RStudio
  - see next slides, with link provided there again

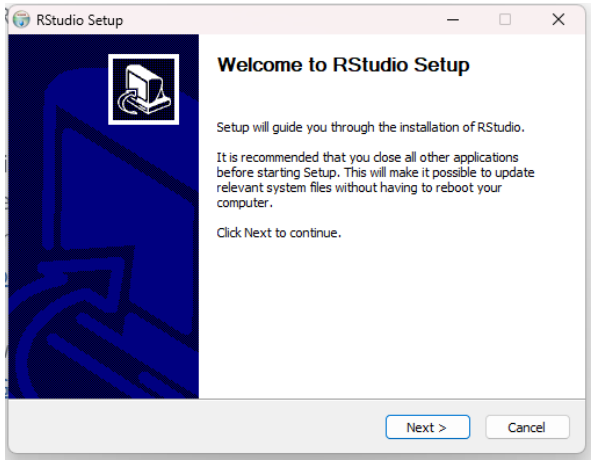
Download RStudio

- https://posit.co/download/rstudio-desktop/

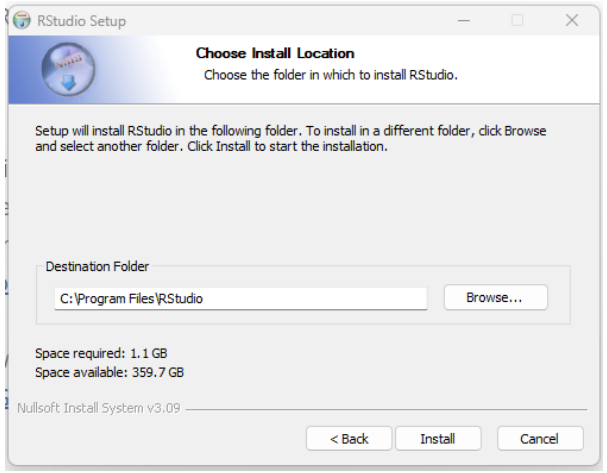


Download RStudio

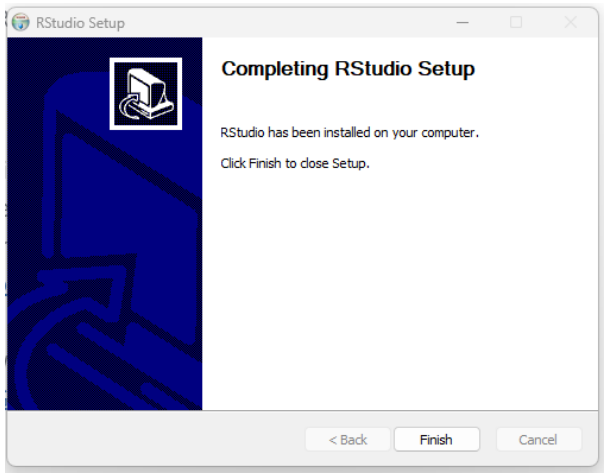
1. Click “Next”



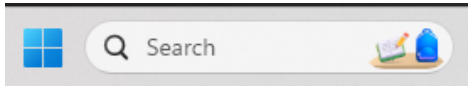
2. Click “Install”



3. Click “Finish”

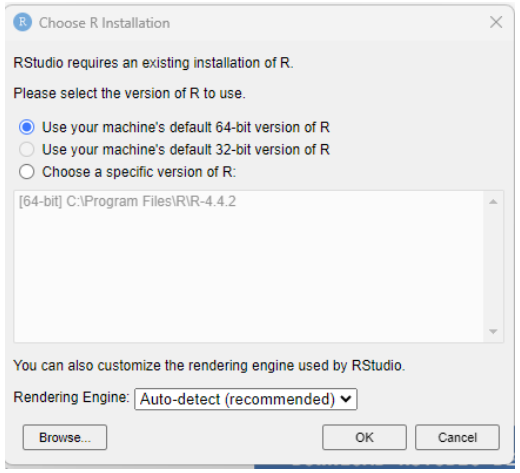


4. Open App



Search Rstudio to locate, or find in recent downloads

5. Click “OK”



Create a shortcut to RStudio, if desired

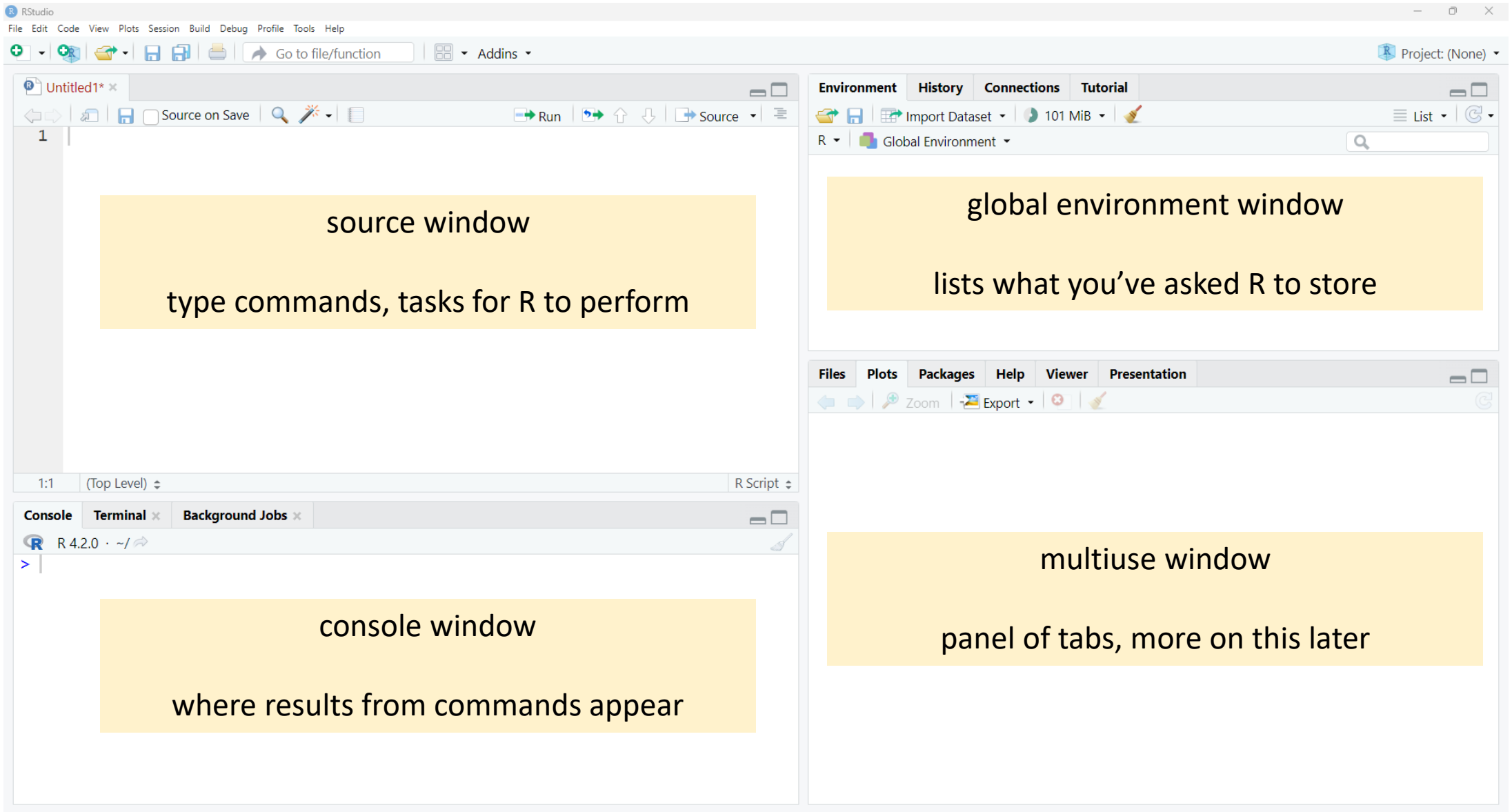
Keep R on your computer, but no need to open

Many YouTube instructional videos if you have any trouble. Find what makes sense to you.
Also, ask me or your peers.

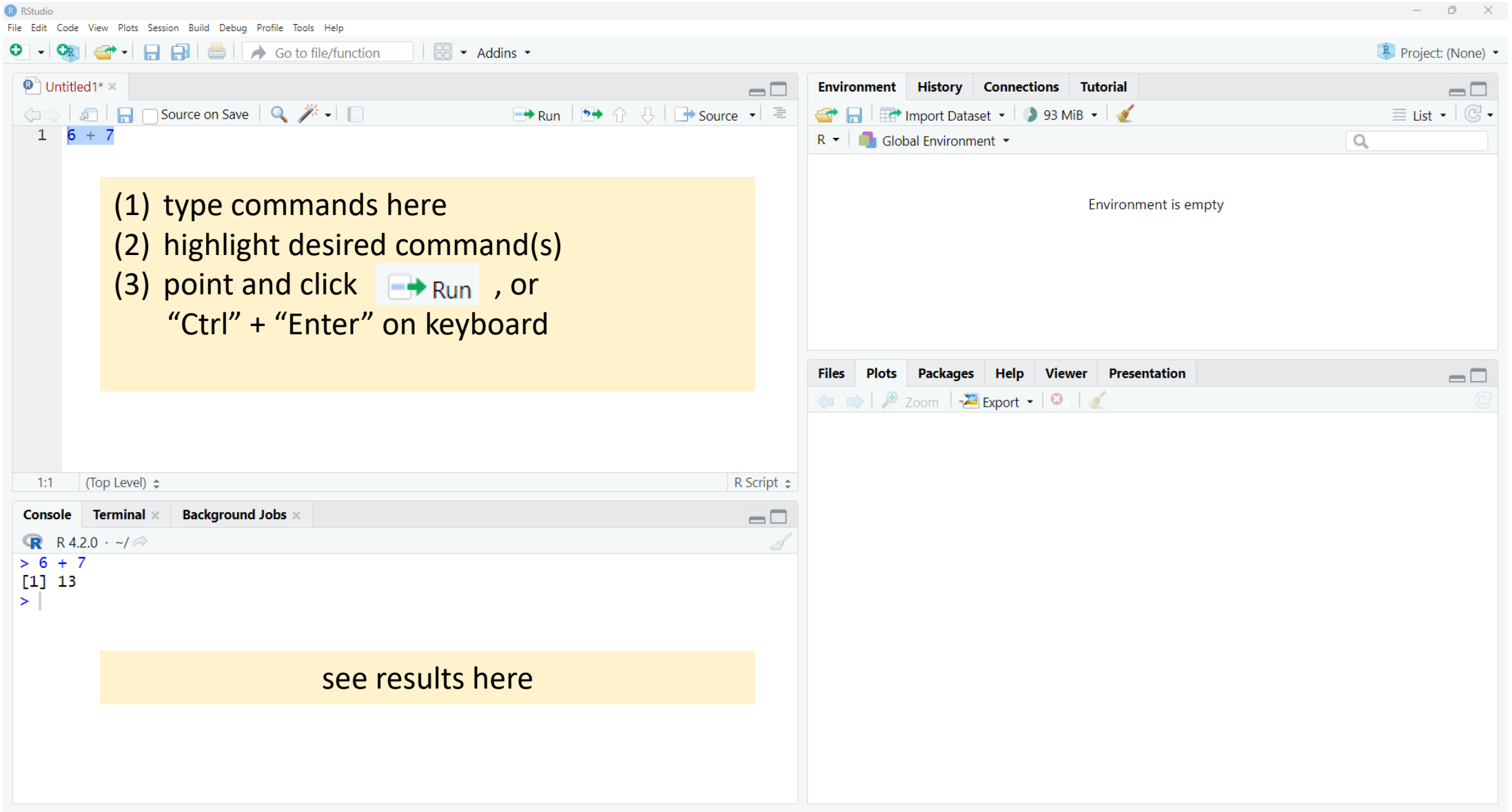
Open RStudio

- and try the following examples…
  - see next slides

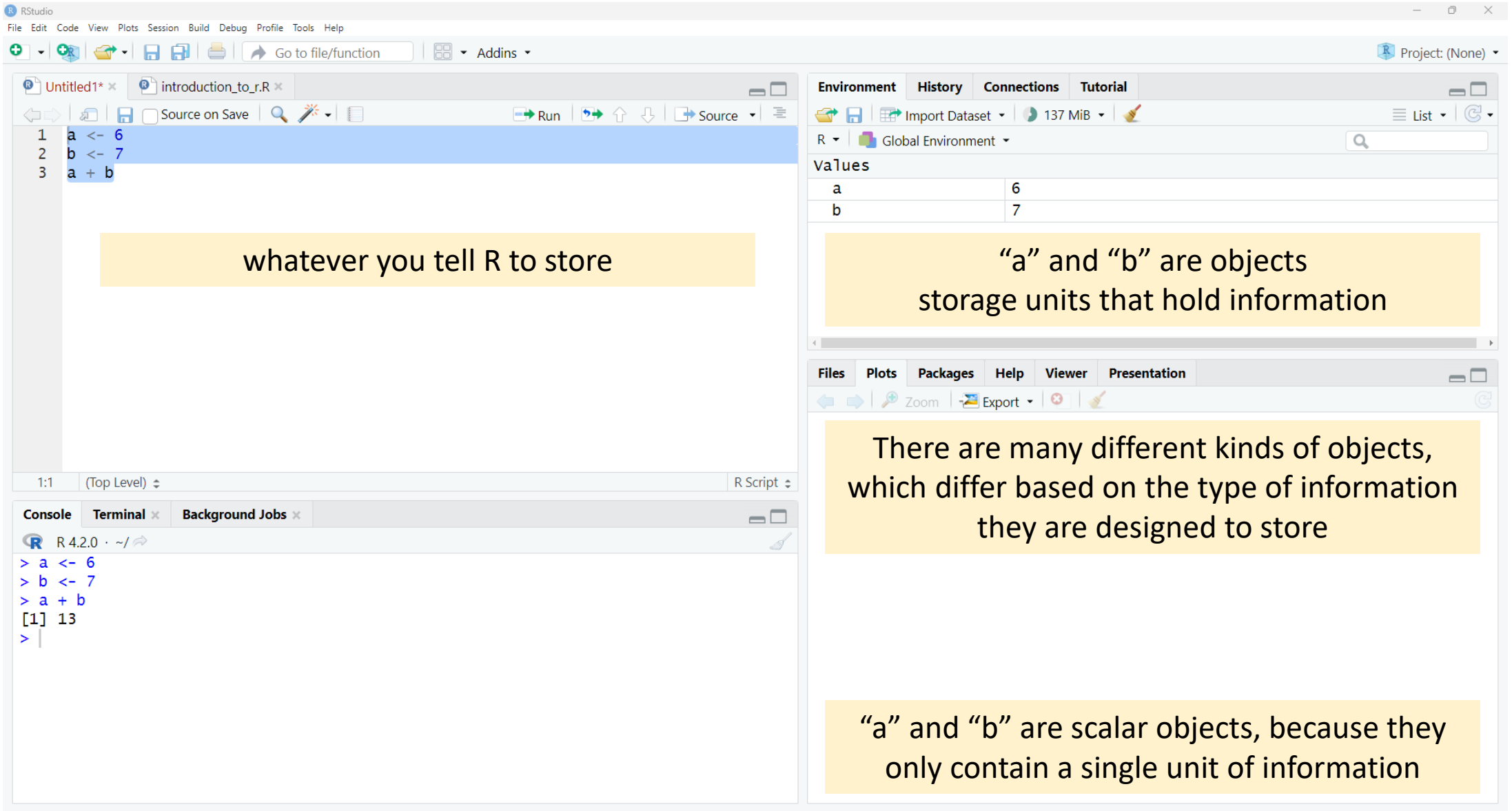
R studio, interface



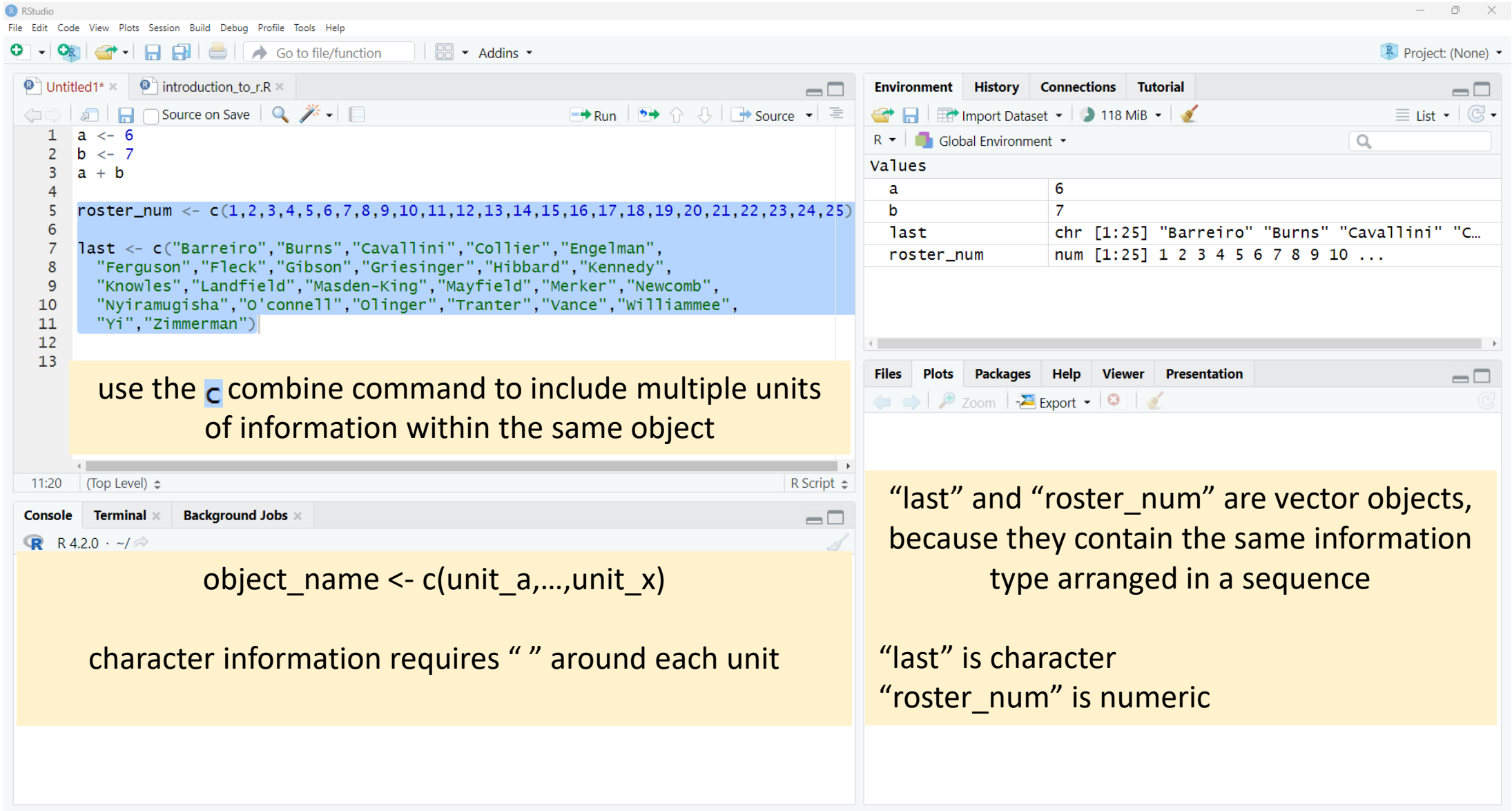
How to run commands



What's in your environment?



Generate objects



use the c combine command to include multiple units of information within the same object

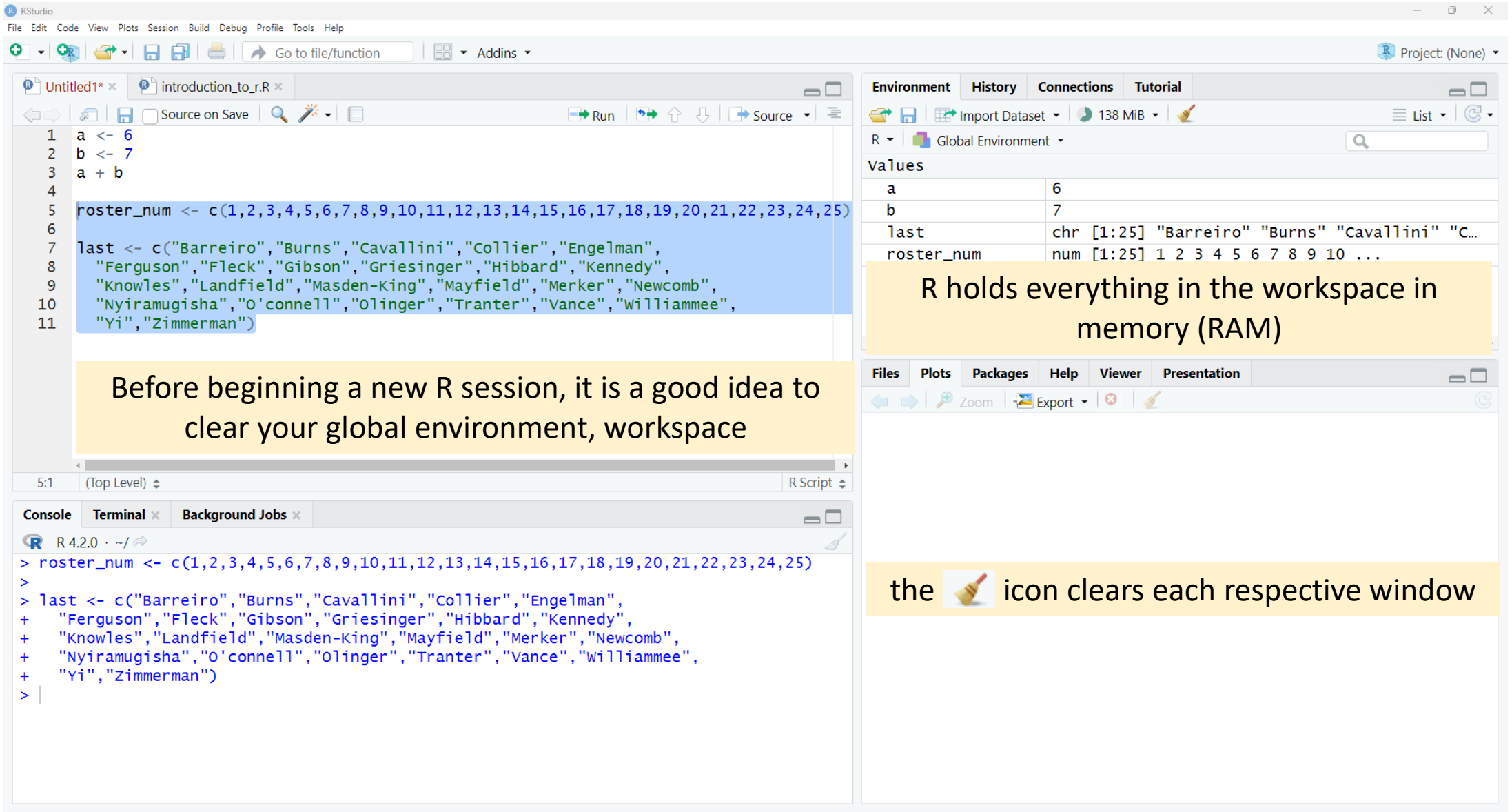
object_name <- c(unit_a,…,unit_x)

character information requires " " around each unit

"last" and "roster_num" are vector objects, because they contain the same information type arranged in a sequence

"last" is character
"roster_num" is numeric

Clearing your global environment & interface



Before beginning a new R session, it is a good idea to clear your global environment, workspace

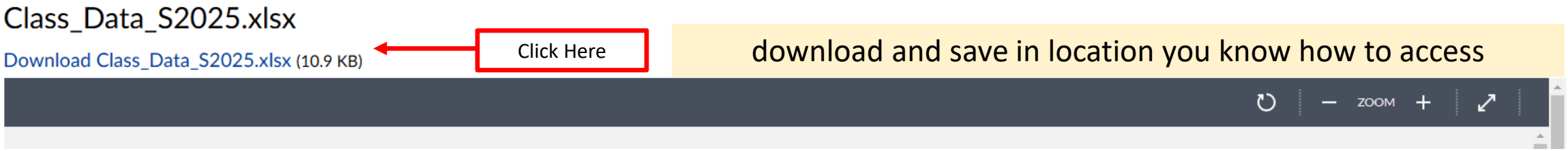
R holds everything in the workspace in memory (RAM)

the icon clears each respective window

Try working with some existing data

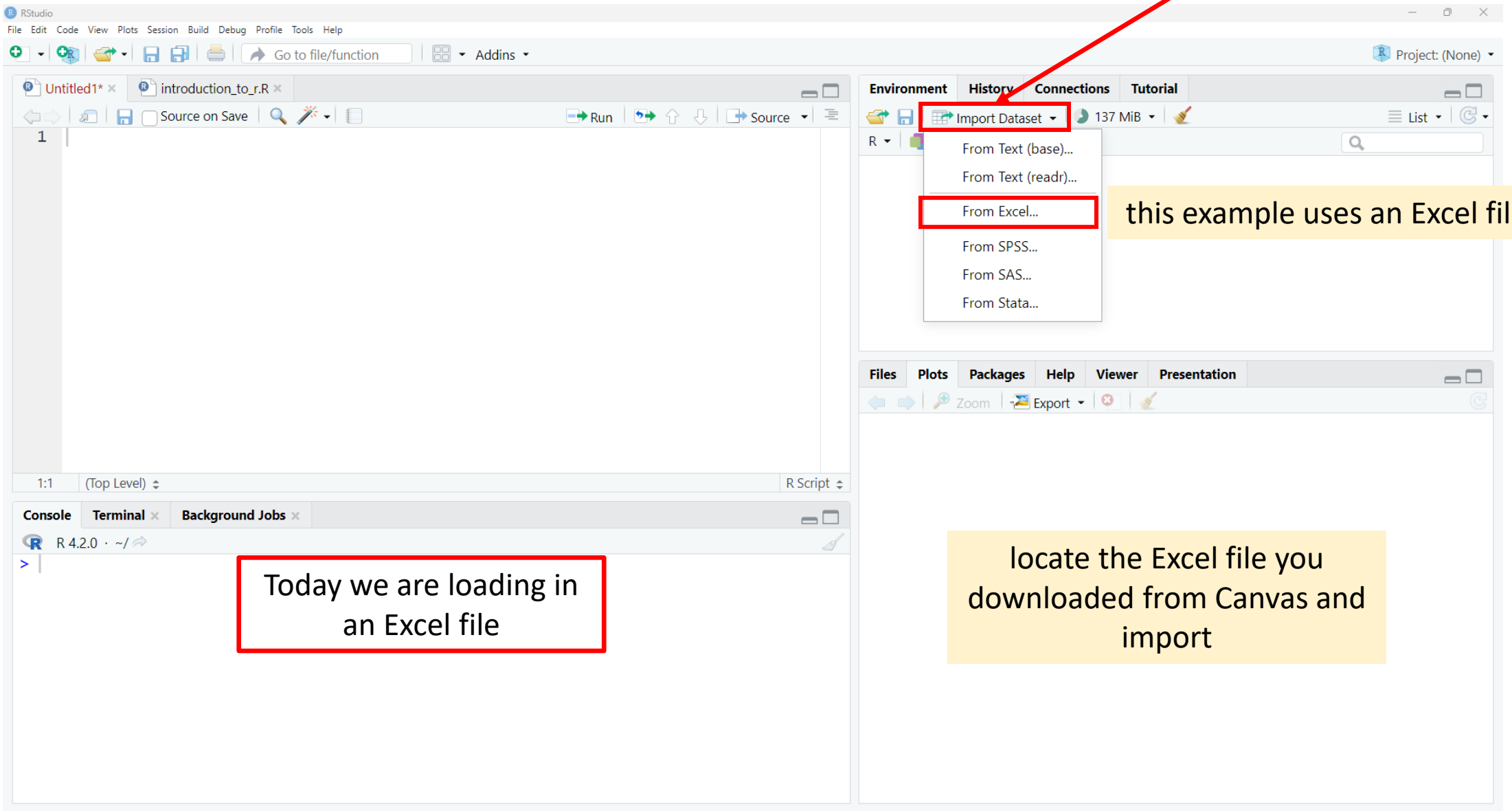
- the following example is based on an Excel file
  - available on our Canvas page

that should take you to a window that looks like this

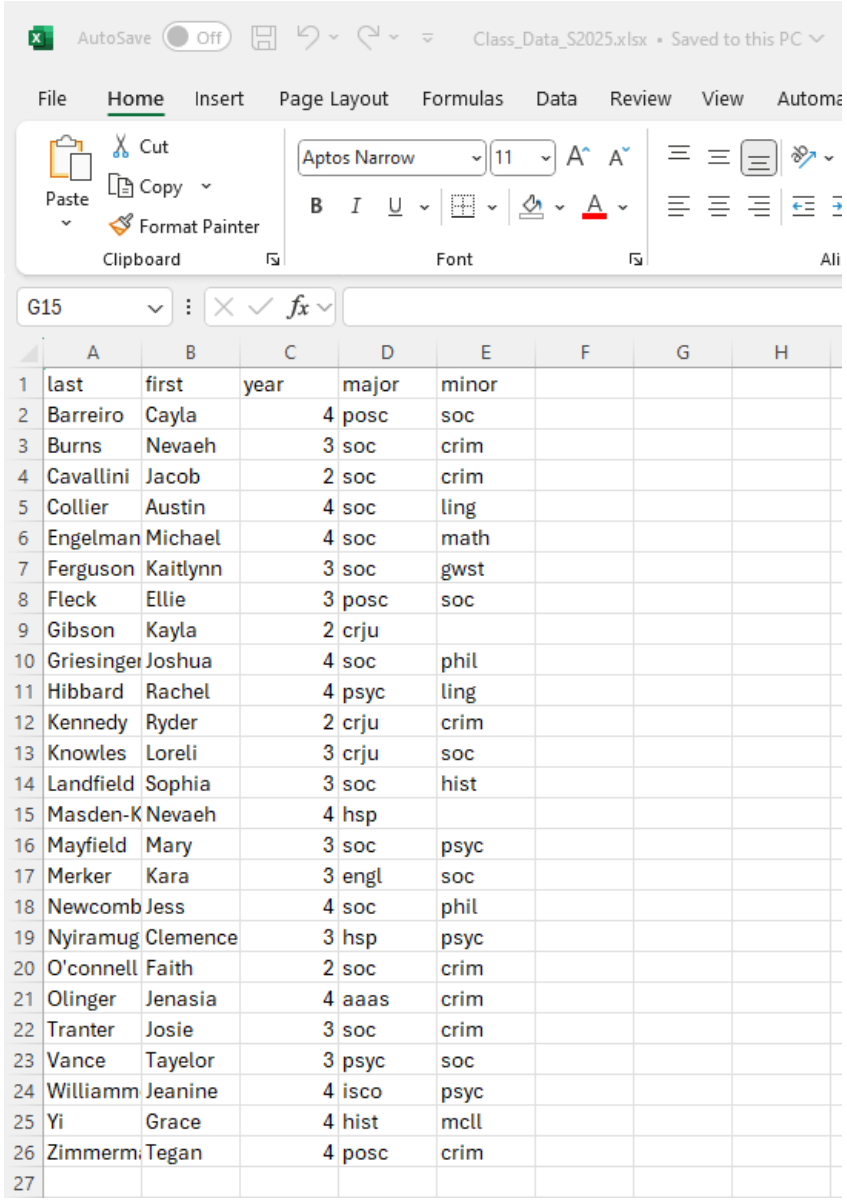


download and save in location you know how to access

Loading data into R



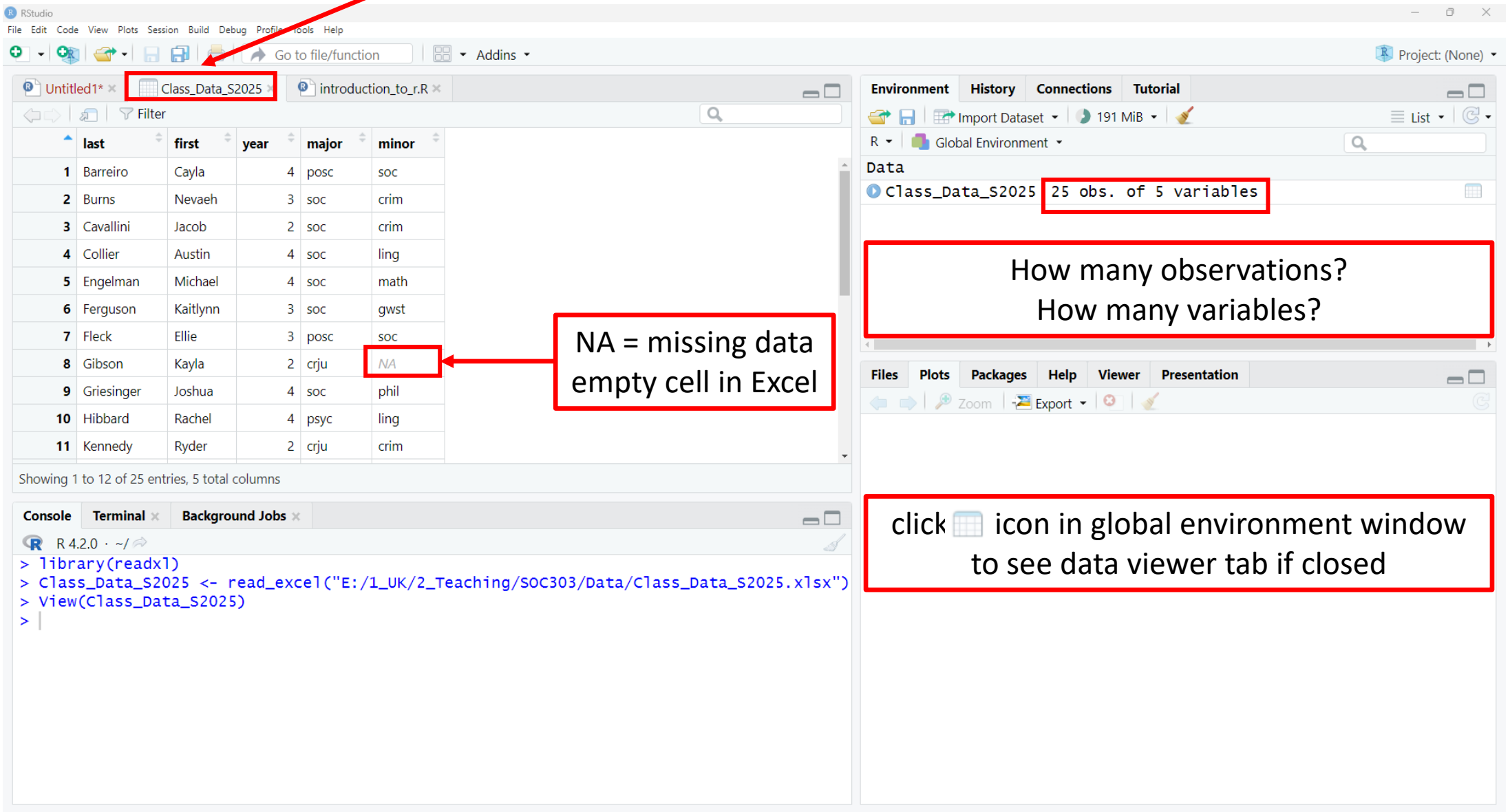
Excel file: standard dataset structure



	A	B	C	D	E	F	G	H
1	last	first	year	major	minor			
2	Barreiro	Cayla	4	posc	soc			
3	Burns	Nevaeh	3	soc	crim			
4	Cavallini	Jacob	2	soc	crim			
5	Collier	Austin	4	soc	ling			
6	Engelman	Michael	4	soc	math			
7	Ferguson	Kaitlynn	3	soc	gwst			
8	Fleck	Ellie	3	posc	soc			
9	Gibson	Kayla	2	crju				
10	Griesinger	Joshua	4	soc	phil			
11	Hibbard	Rachel	4	psyc	ling			
12	Kennedy	Ryder	2	crju	crim			
13	Knowles	Loreli	3	crju	soc			
14	Landfield	Sophia	3	soc	hist			
15	Masden-K	Nevaeh	4	hsp				
16	Mayfield	Mary	3	soc	psyc			
17	Merker	Kara	3	engl	soc			
18	Newcomb	Jess	4	soc	phil			
19	Nyiramug	Clemence	3	hsp	psyc			
20	O'connell	Faith	2	soc	crim			
21	Olinger	Jenasia	4	aaas	crim			
22	Tranter	Josie	3	soc	crim			
23	Vance	Tayelor	3	psyc	soc			
24	Williamm	Jeanine	4	isco	psyc			
25	Yi	Grace	4	hist	mcll			
26	Zimmerm	Tegan	4	posc	crim			
27								

- first row contains variable names
  - R is case sensitive
- subsequent rows contain observations
- columns contain variable information
  - each data type is the same, respectively
- How many observations?
- How many variables?

Data viewer


see the new tab
Untitled1*
Class_Data_S2025
introduction_to_r.R
Filter
last first year major minor
1 Barreiro Cayla 4 posc soc
2 Burns Nevaeh 3 soc crim
3 Cavallini Jacob 2 soc crim
4 Collier Austin 4 soc ling
5 Engelman Michael 4 soc math
6 Ferguson Kaitlynn 3 soc gwst
7 Fleck Ellie 3 posc soc
8 Gibson Kayla 2 crju NA
9 Griesinger Joshua 4 soc phil
10 Hibbard Rachel 4 psyc ling
11 Kennedy Ryder 2 crju crim
Showing 1 to 12 of 25 entries, 5 total columns
NA = missing data
empty cell in Excel
Environment History Connections Tutorial
Import Dataset
191 MiB
List
Global Environment
Data
Class_Data_S2025 25 obs. of 5 variables
How many observations?
How many variables?
Files Plots Packages Help Viewer Presentation
Zoom
Export
Console Terminal Background Jobs
R 4.2.0 · ~/
> library(readxl)
> Class_Data_S2025 <- read_excel("E:/1_UK/2_Teaching/SOC303/Data/Class_Data_S2025.xlsx")
> View(Class_Data_S2025)
click icon in global environment window
to see data viewer tab if closed

If you’re feeling froggy

- find some RStudio tutorials on YouTube and try to follow along
  - the only way to learn is practice
- It’s okay to not feel froggy
  - we will ease into RStudio in class
- It’s also okay if you didn’t make it this far
  - let me know if you are having any issues downloading and installing
    - we will work on using RStudio throughout the semester