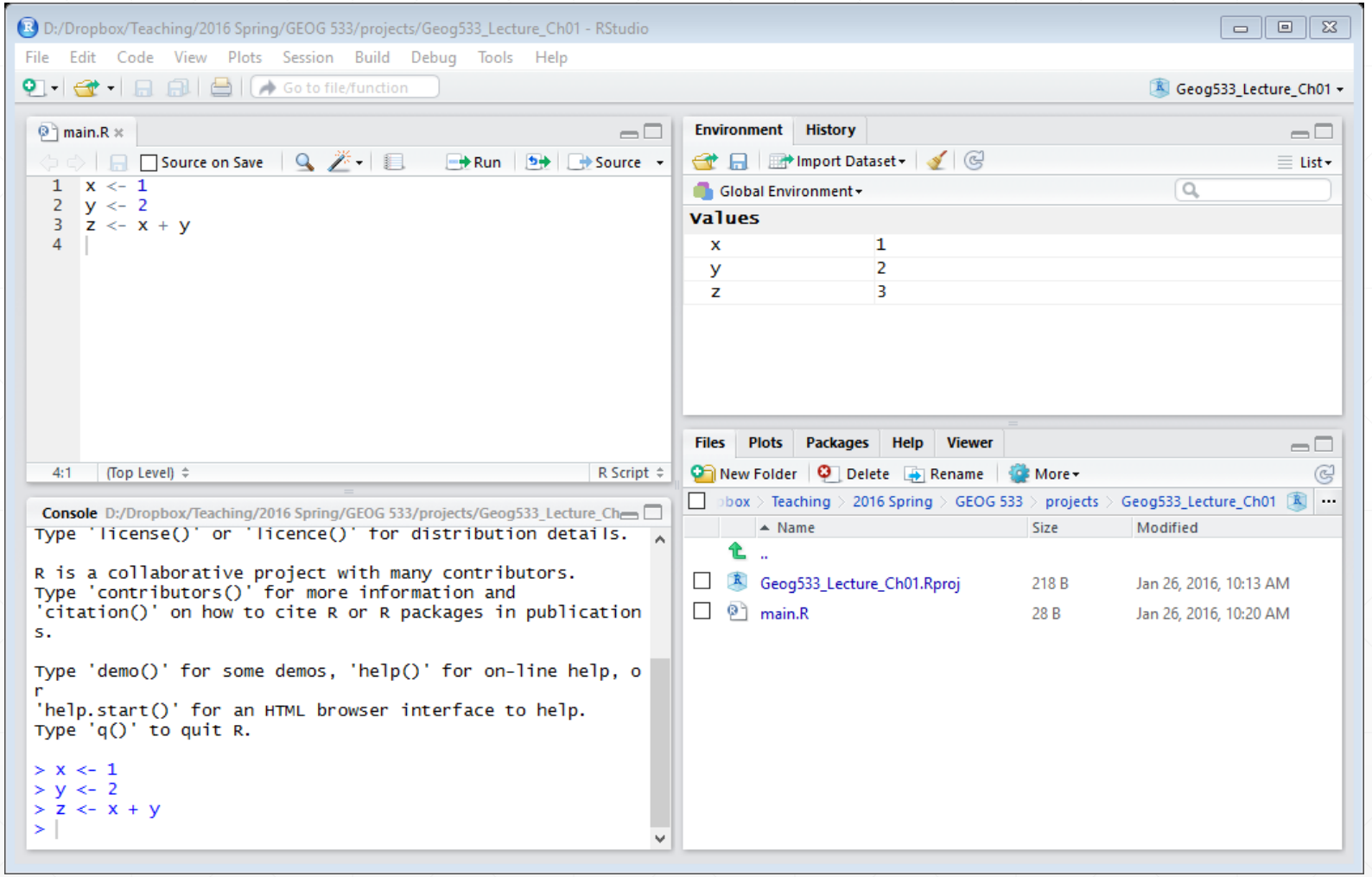
Getting started with RStudio

RStudio Interface



Write Code

Navigate tabs

Open in new window

Save

Find and replace

Compile as notebook

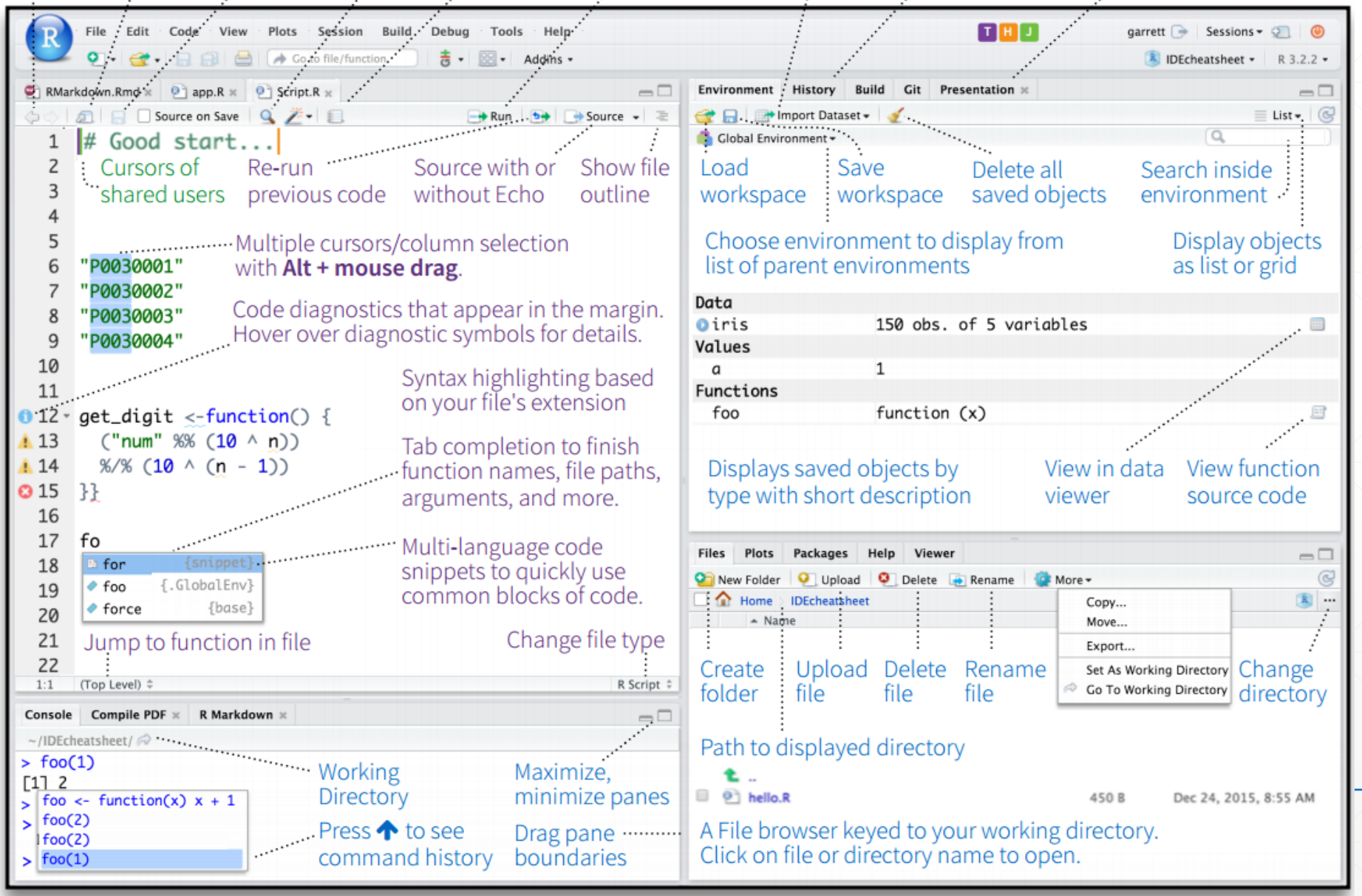
Run selected code

R Support

Import data file with wizard

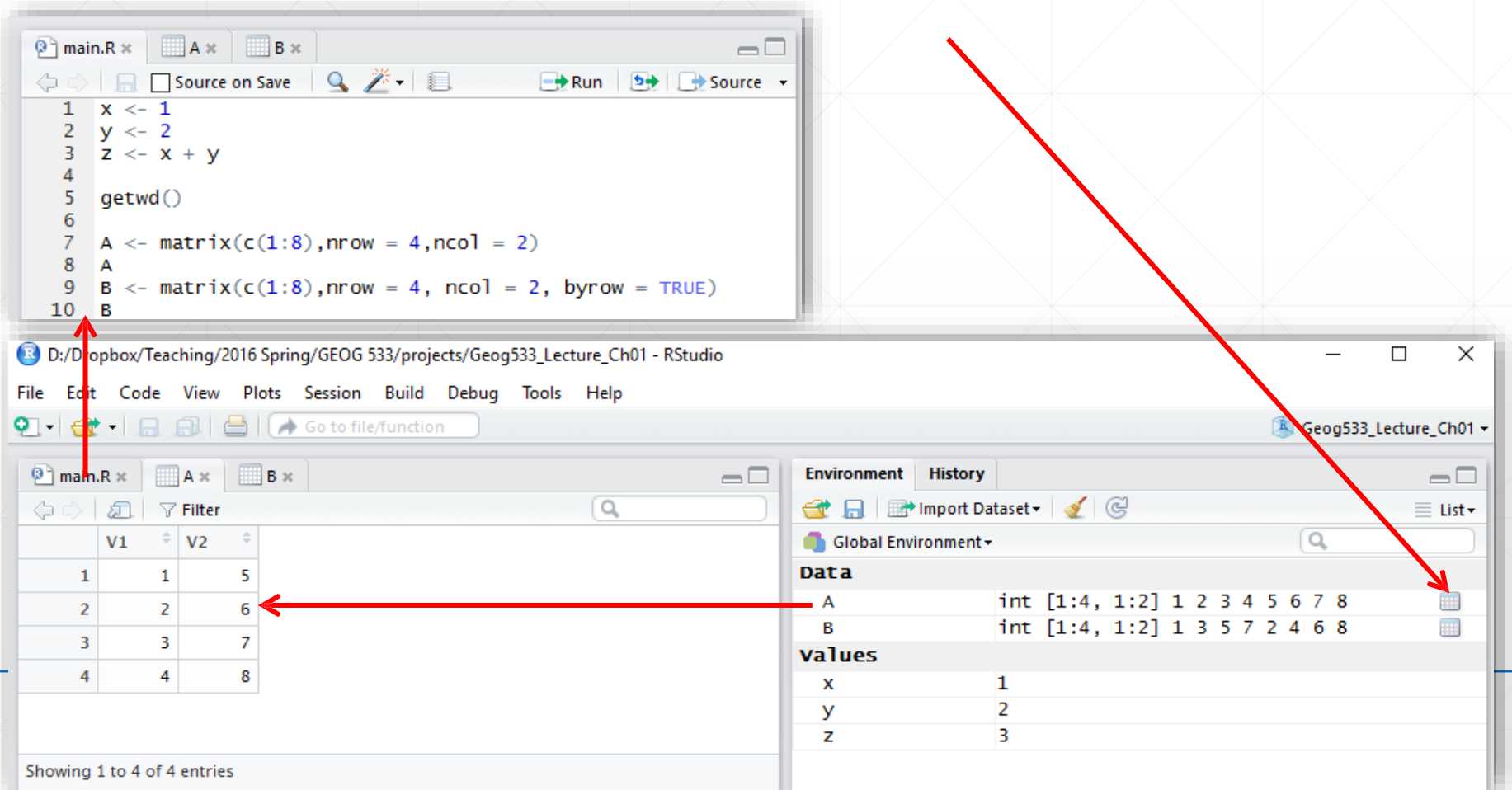
History of past commands to run/add to source

Display .RPres slideshows **File > New File > R Presentation**



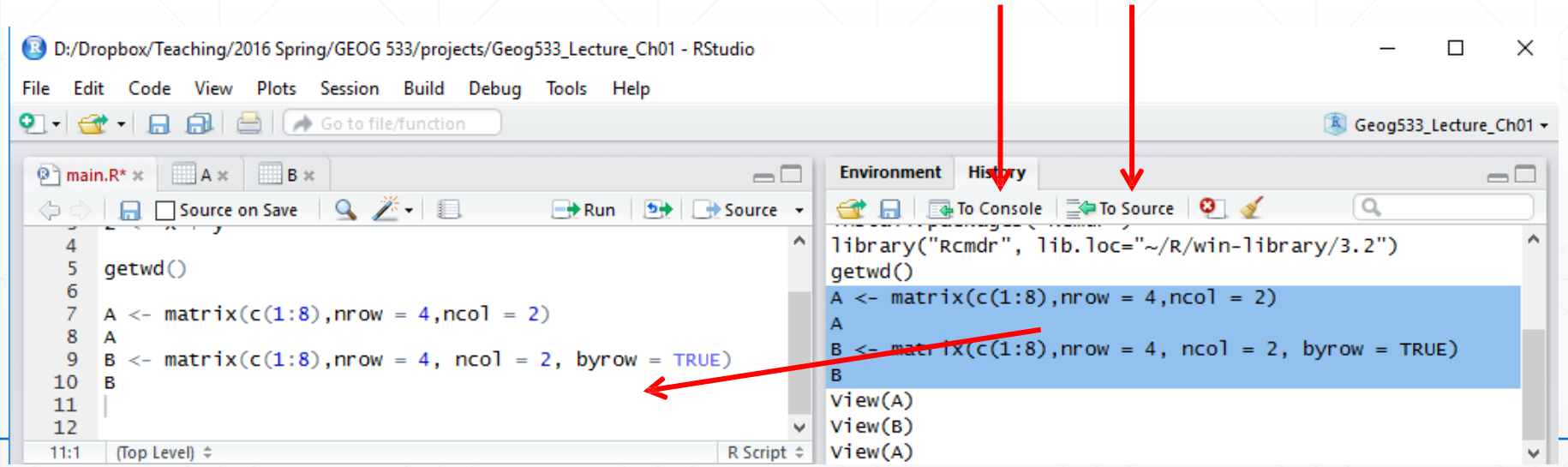
Environment tab

The Environment tab stores any object, value, function or anything you create during your R session. In the example below, if you click on the dotted squares you can see the data on a screen to the left.

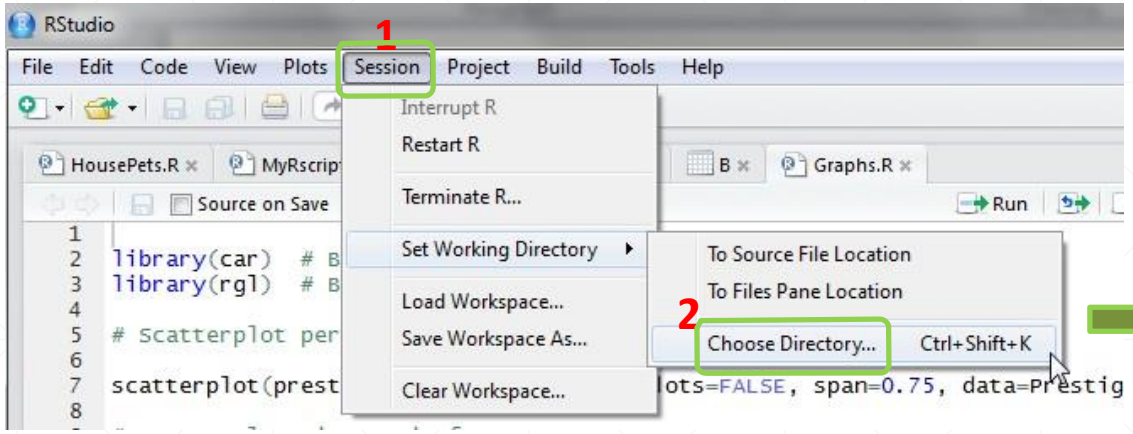


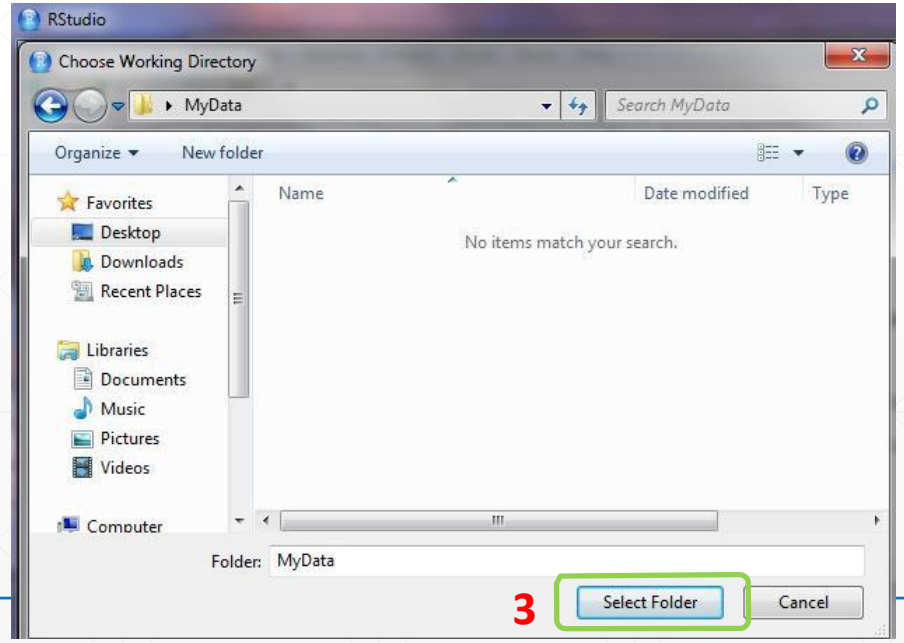
History tab

The history tab keeps a record of all previous commands. It helps when testing and running processes. Here you can either **save** the whole list or you can **select** the commands you want and send them to an R script to keep track of your work.
In this example, we select all and click on the "`To Source`" icon, a window on the left will open with the list of commands. Make sure to save the 'untitled1' file as an *.R script.



Changing the working directory

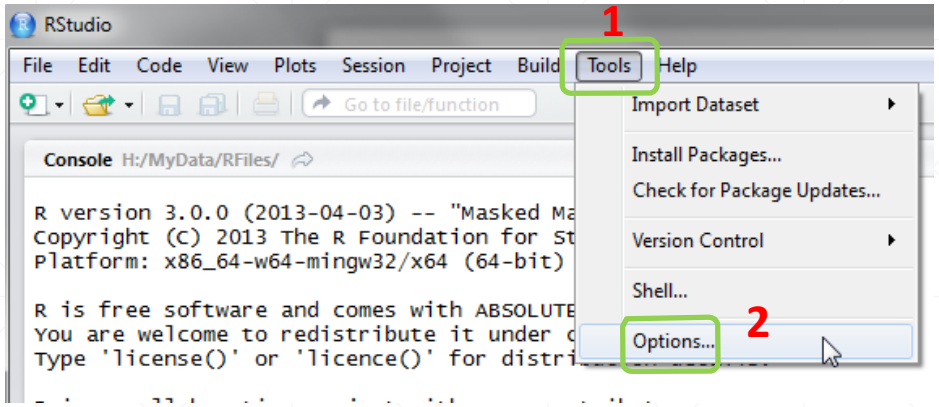


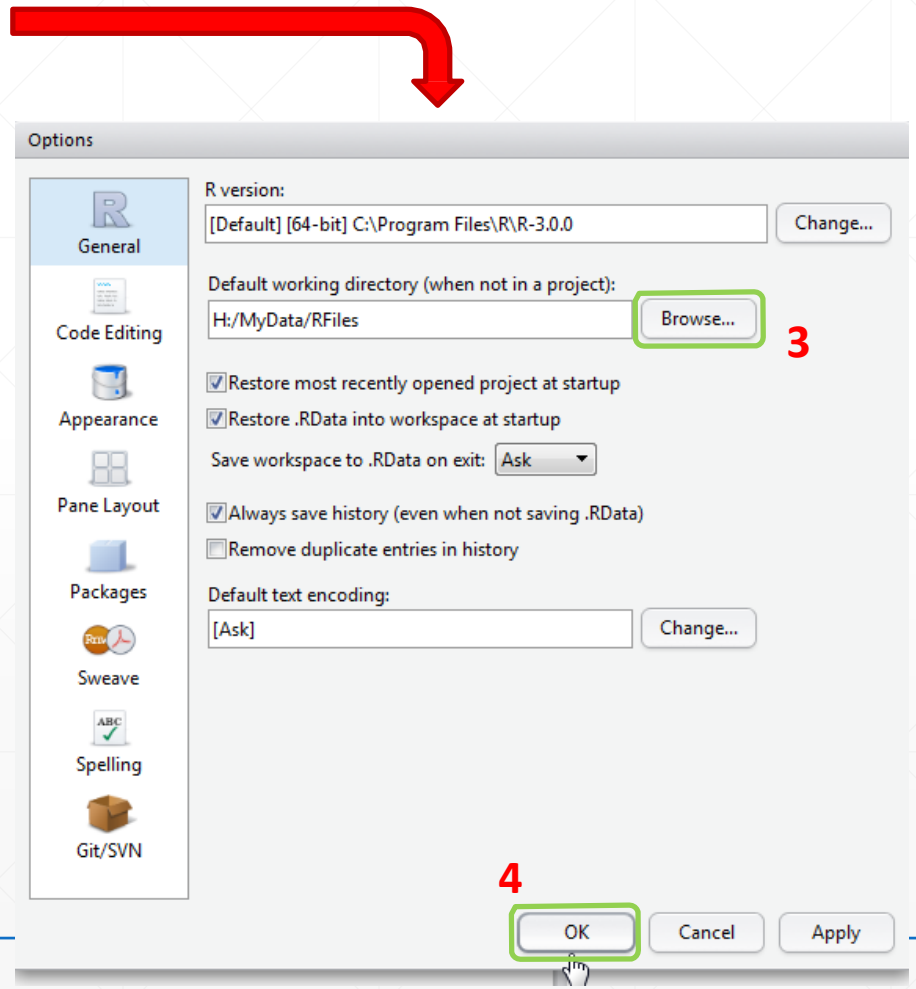


If you have different projects you can change the working directory for that session, see above. Or you can type:

```
# Shows the working directory (wd)

getwd()

# Changes the wd

setwd("C:/myfolder/data")
```

Setting a default working directory

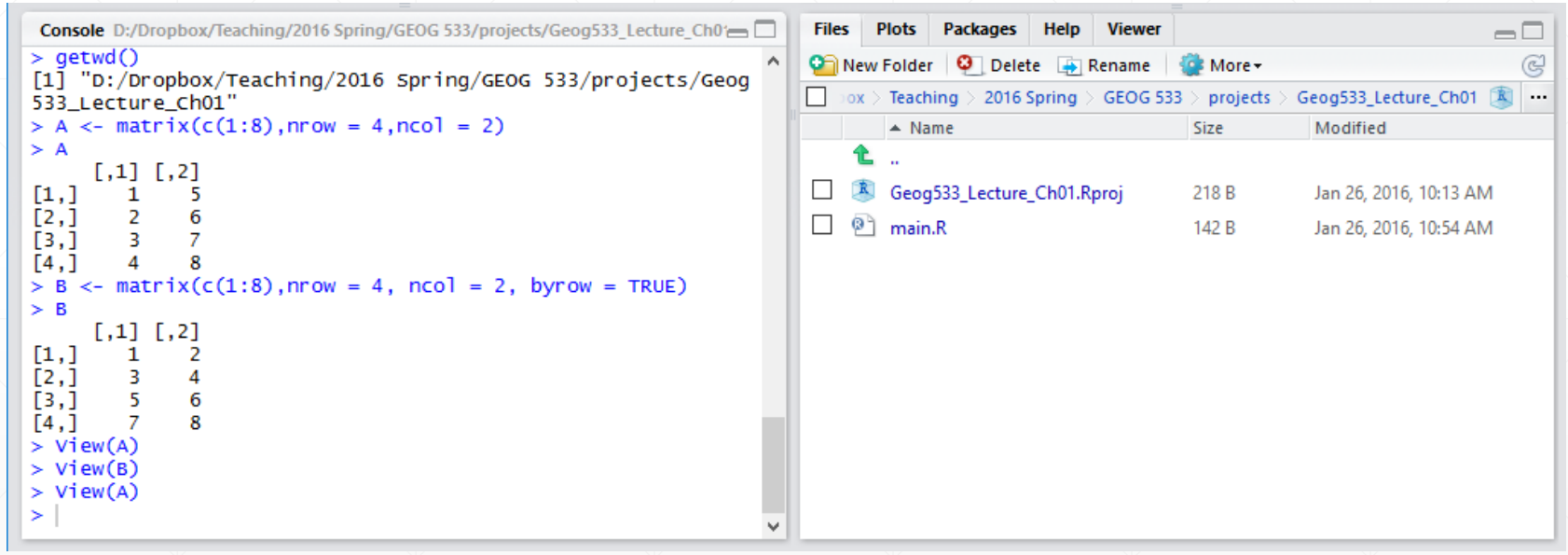




Every time you open RStudio, it goes to a default directory. You can change the default to a folder where you have your datafiles so you do not have to do it every time. In the menu go to Tools->Options

Console tab

Ctrl + *L* to clear the Console

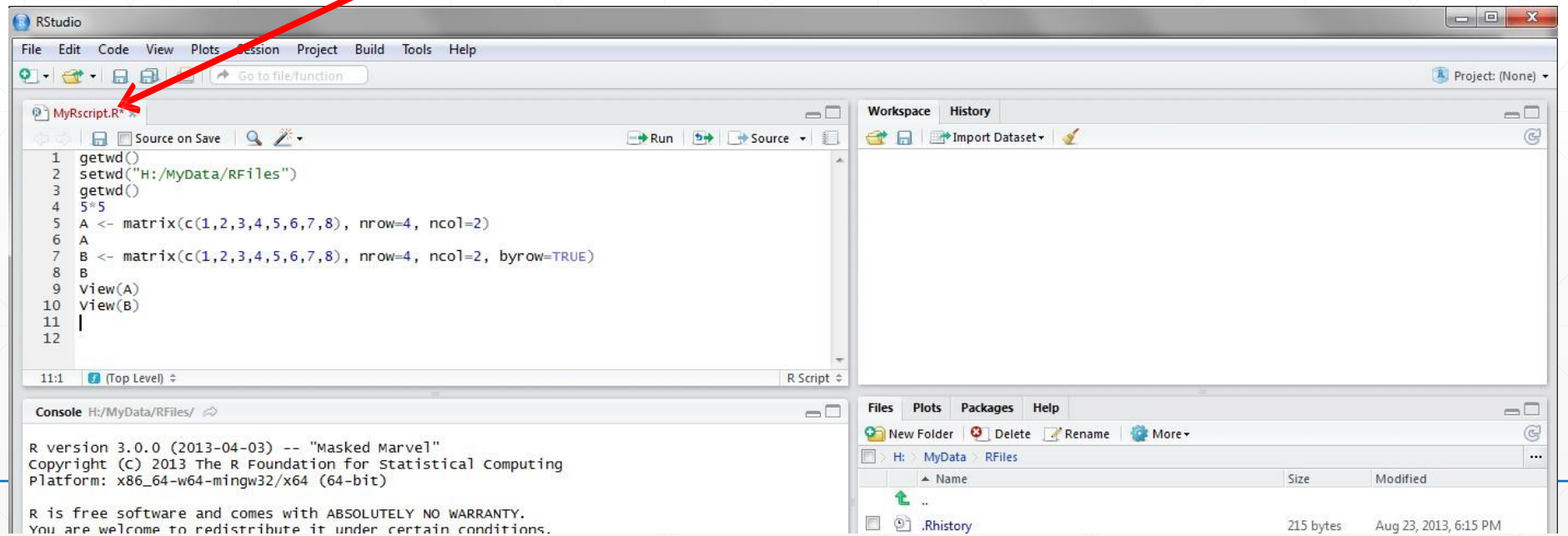


R script (1)

The usual RStudio screen has four windows:

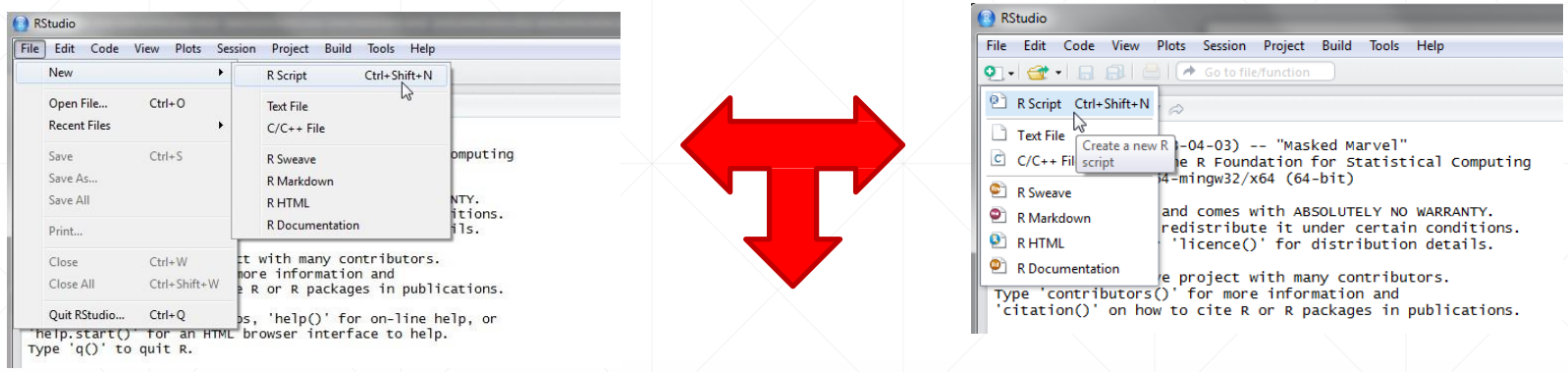
1. Console.
2. Environment and history.
3. Files, plots, packages and help.
4. The R script(s) and data view.

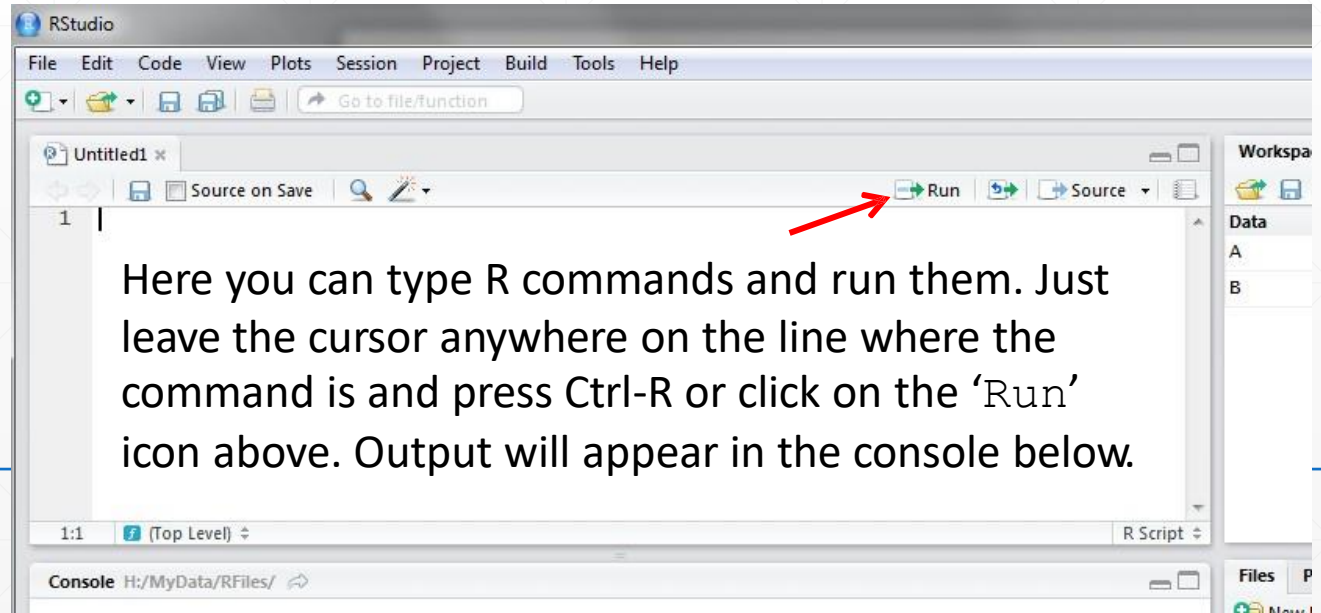
The R script is where you keep a record of your work.



R script (2)

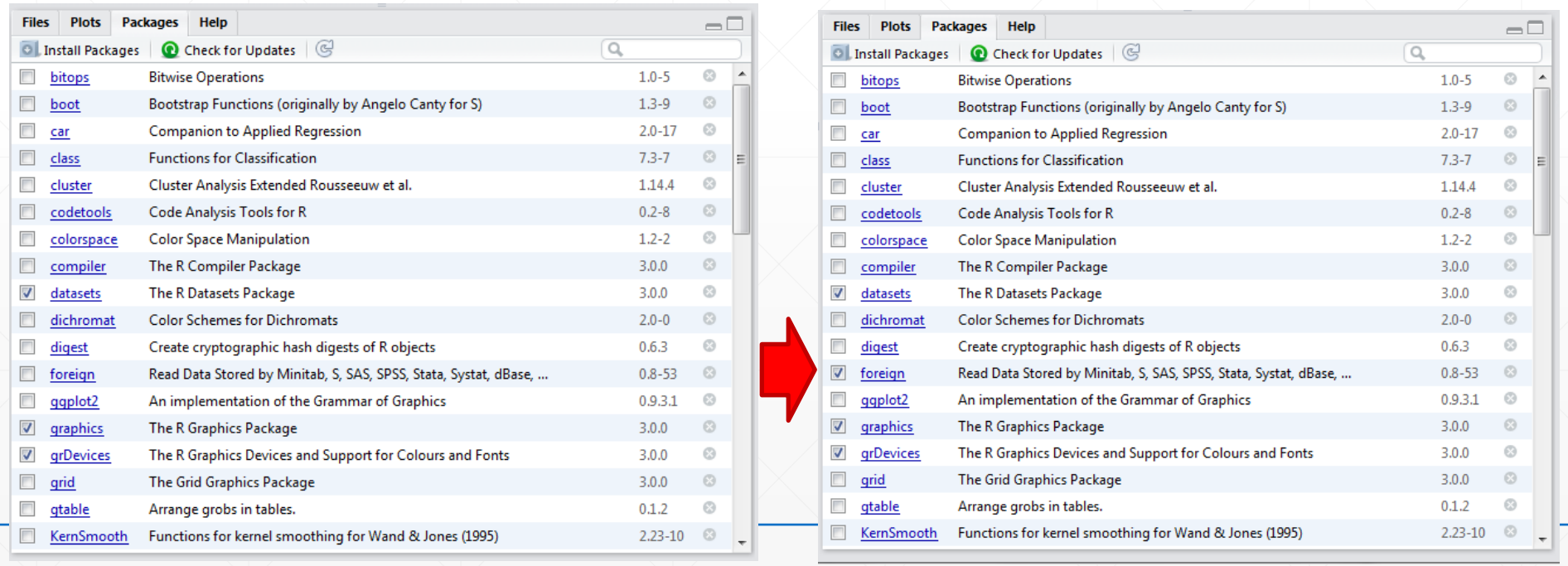
To create a new R script you can either go to `File -> New -> R Script`, or click on the icon with the “+” sign and select “R Script”, or simply press Ctrl+Shift+N. Make sure to save the script.



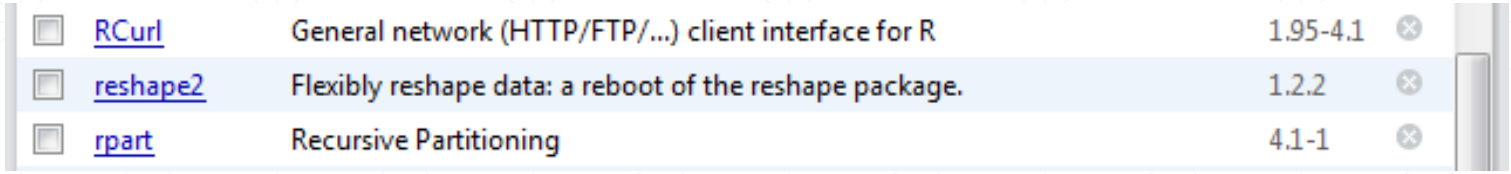


Packages tab

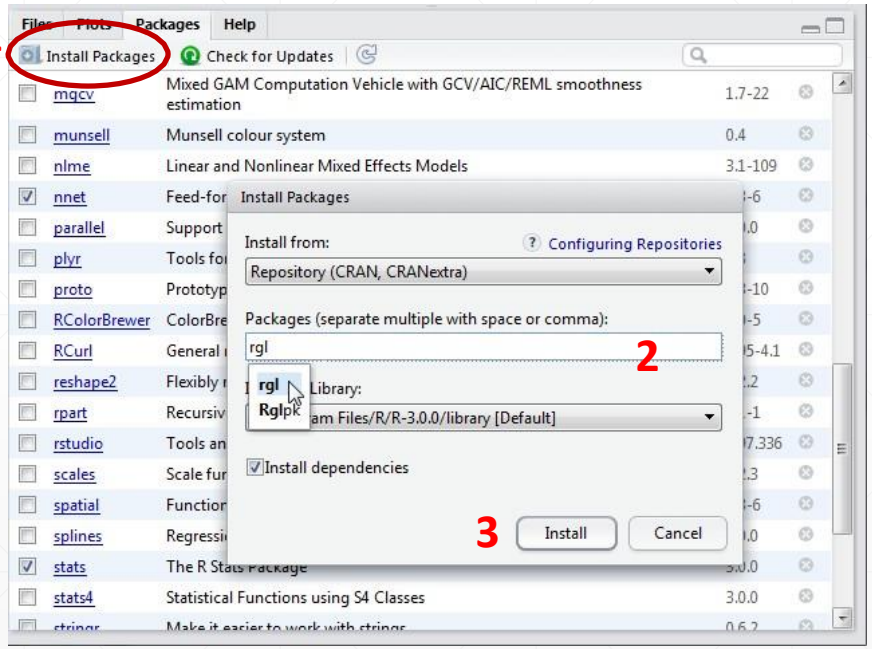
The package tab shows the list of add-ons included in the installation of RStudio. If checked, the package is loaded into R, if not, any command related to that package won't work, you will need select it. You can also install other add-ons by clicking on the 'Install Packages' icon. Another way to activate a package is by typing, for example, `library(foreign)`. This will automatically check the `--foreign` package (it helps bring data from proprietary formats like Stata, SAS or SPSS).



Installing a package

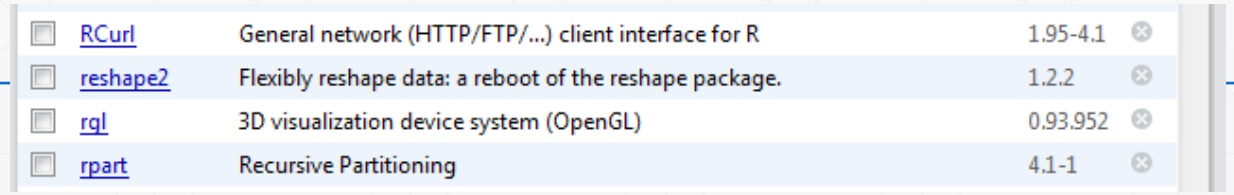


Before

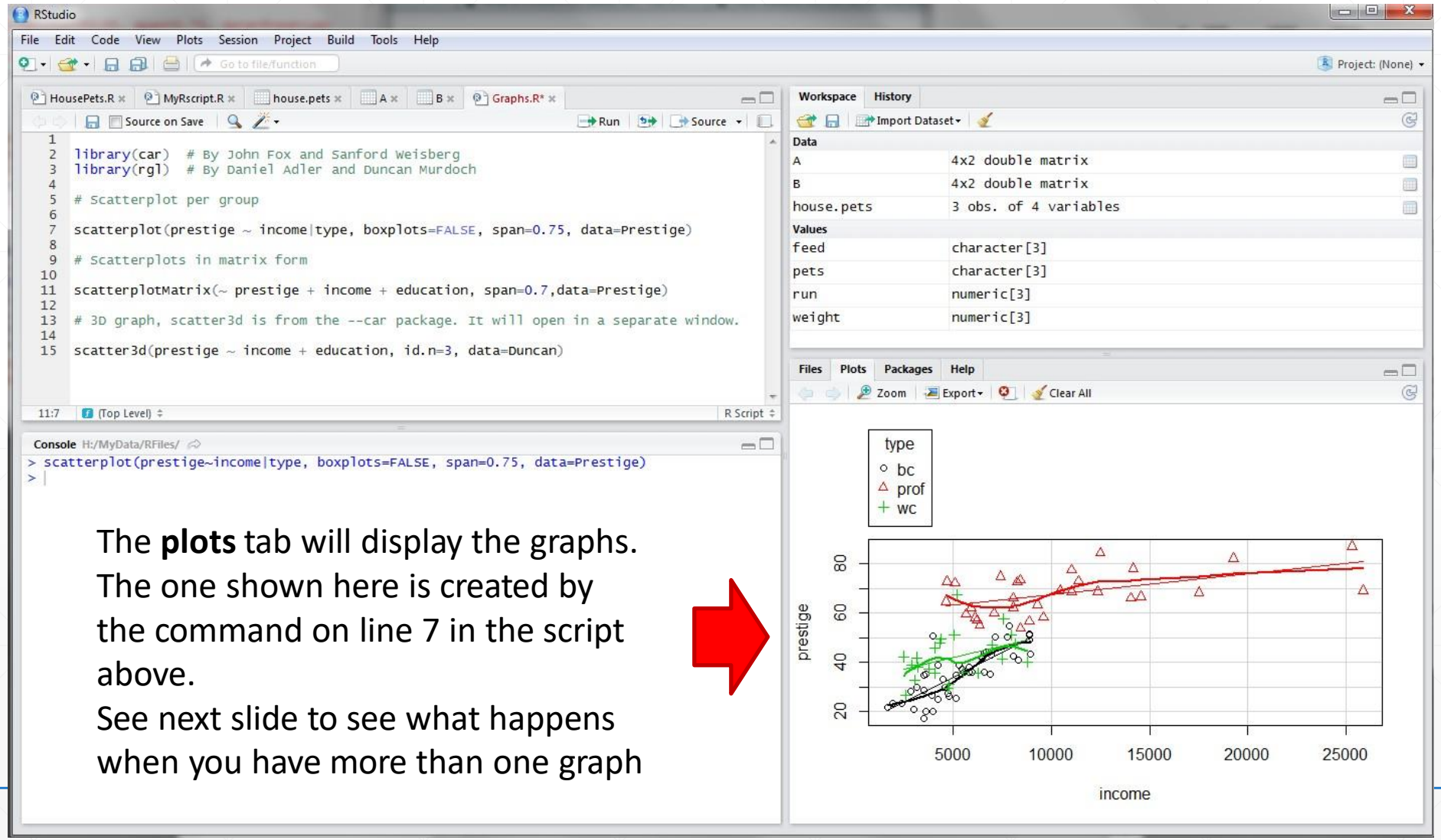


We are going to install the package – `rgl` (useful to plot 3D images). It does not come with the original R install.
Click on "`Install Packages`", write the name in the pop-up window and click on "`Install`".

After



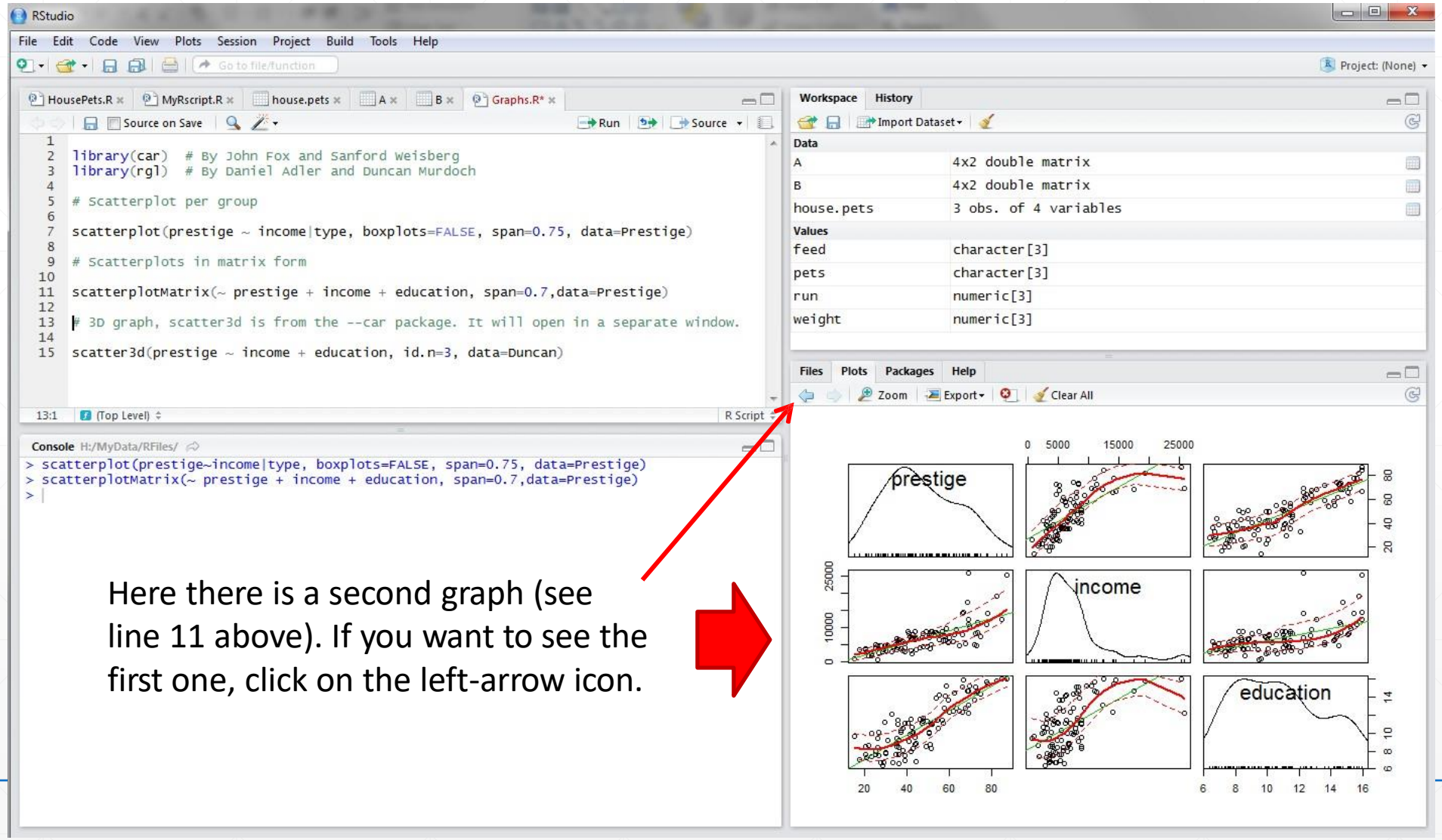
Plots tab (1)



The **plots** tab will display the graphs. The one shown here is created by the command on line 7 in the script above.

See next slide to see what happens when you have more than one graph

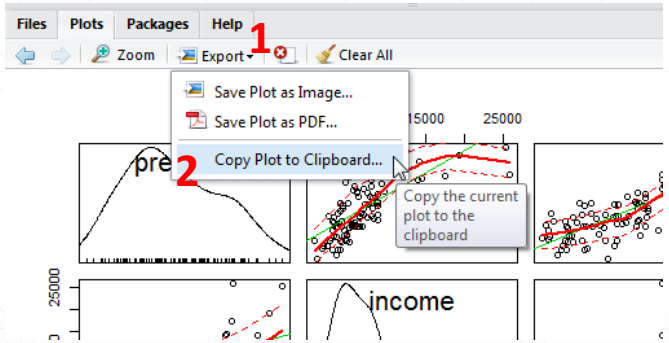
Plots tab (2)

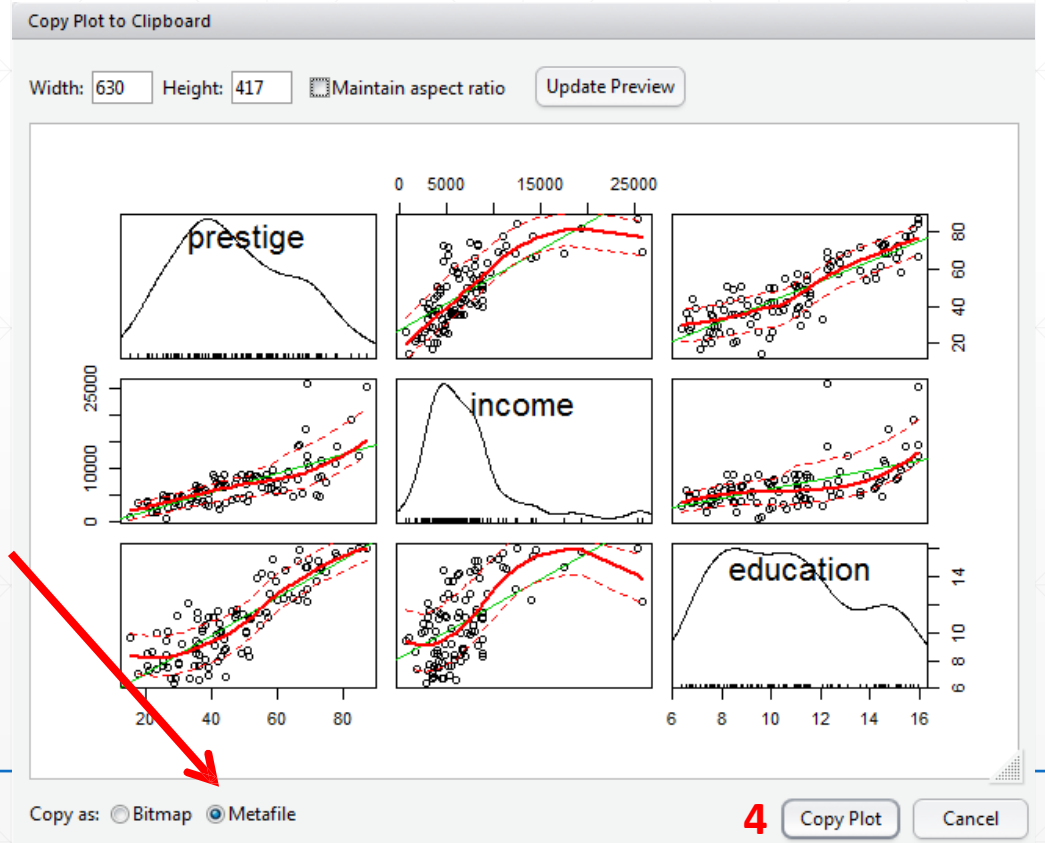


Here there is a second graph (see line 11 above). If you want to see the first one, click on the left-arrow icon.

Plots tab (3) – Graphs export

To extract the graph, click on "`Export`" where you can save the file as an image (PNG, JPG, etc.) or as PDF, these options are useful when you only want to share the graph or use it in a LaTeX document. Probably, the easiest way to export a graph is by copying it to the clipboard and then paste it directly into your Word document.

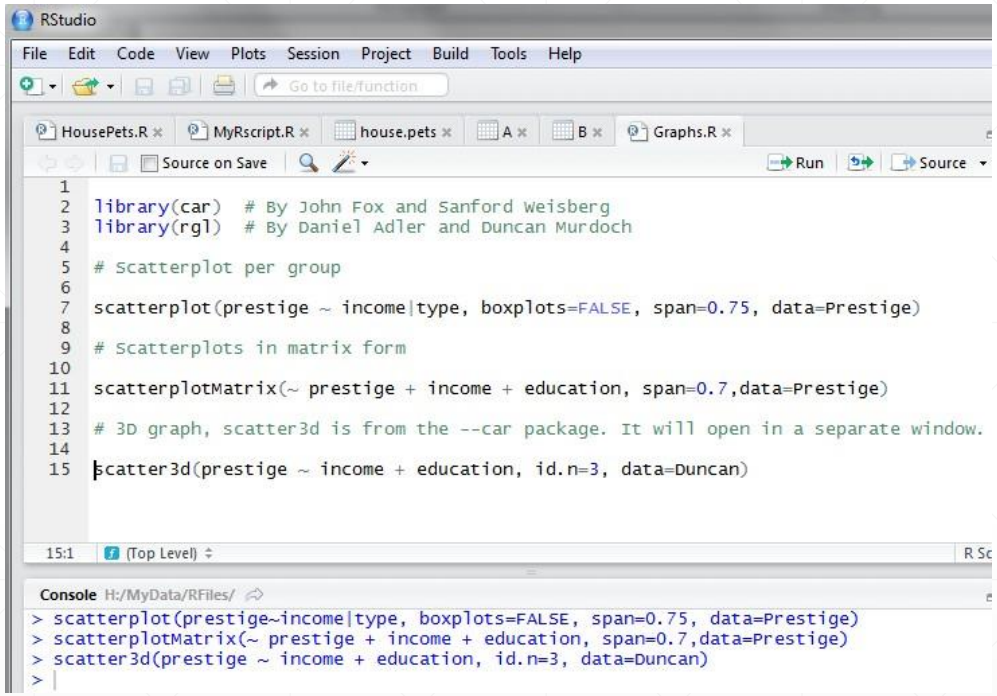




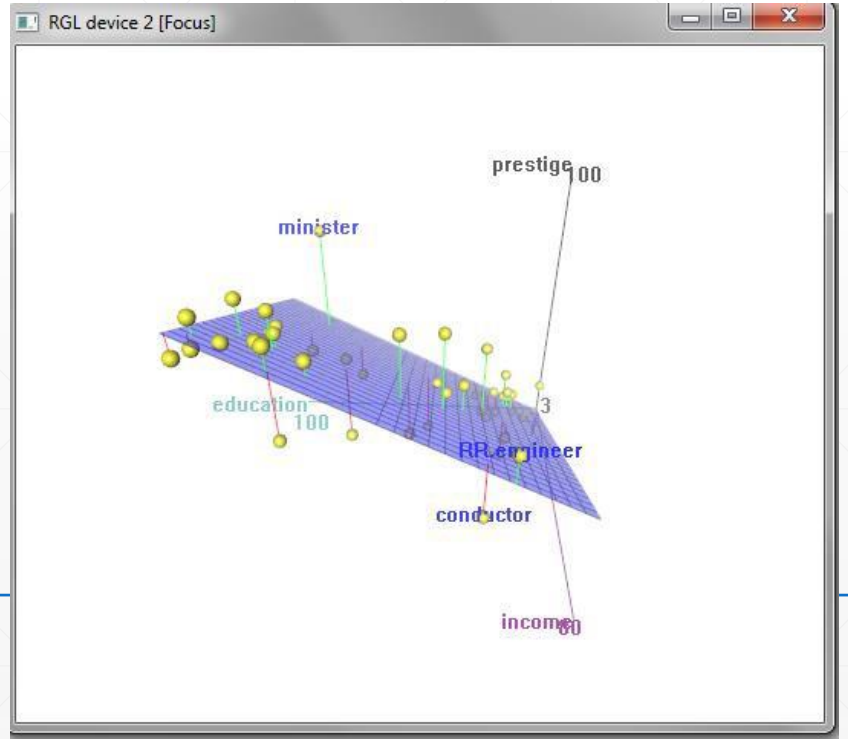
3 Make sure to select '`Metafile`'

5 Paste it into your Word document

3D graphs



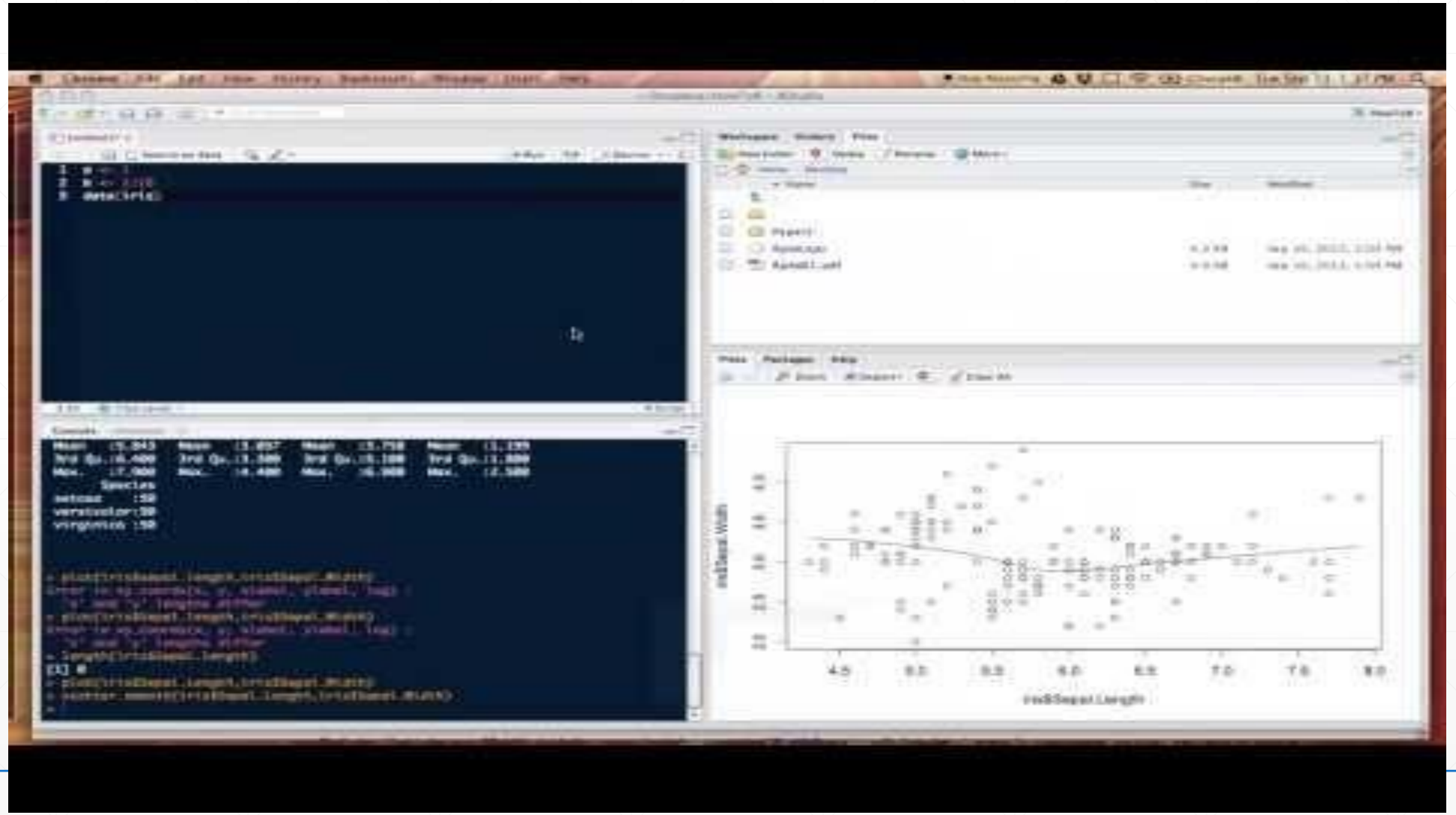
3D graphs will display on a separate screen (see line 15 above). You won't be able to save it, but after moving it around, once you find the angle you want, you can screenshot it and paste it to you Word document.



Useful Resources

- RStudio Cheat Sheets
  - https://www.rstudio.com/resources/cheatsheets/
- RStudio Webinars and Videos
  - https://www.rstudio.com/resources/webinars/
- RStudio webinar materials on GitHub
  - https://github.com/rstudio/webinars
- RStudio Documentation
  - https://support.rstudio.com/hc/en-us/sections/200107586-Using-RStudio

Getting started with R and RStudio



R Programming Tutorials