ITP321 112

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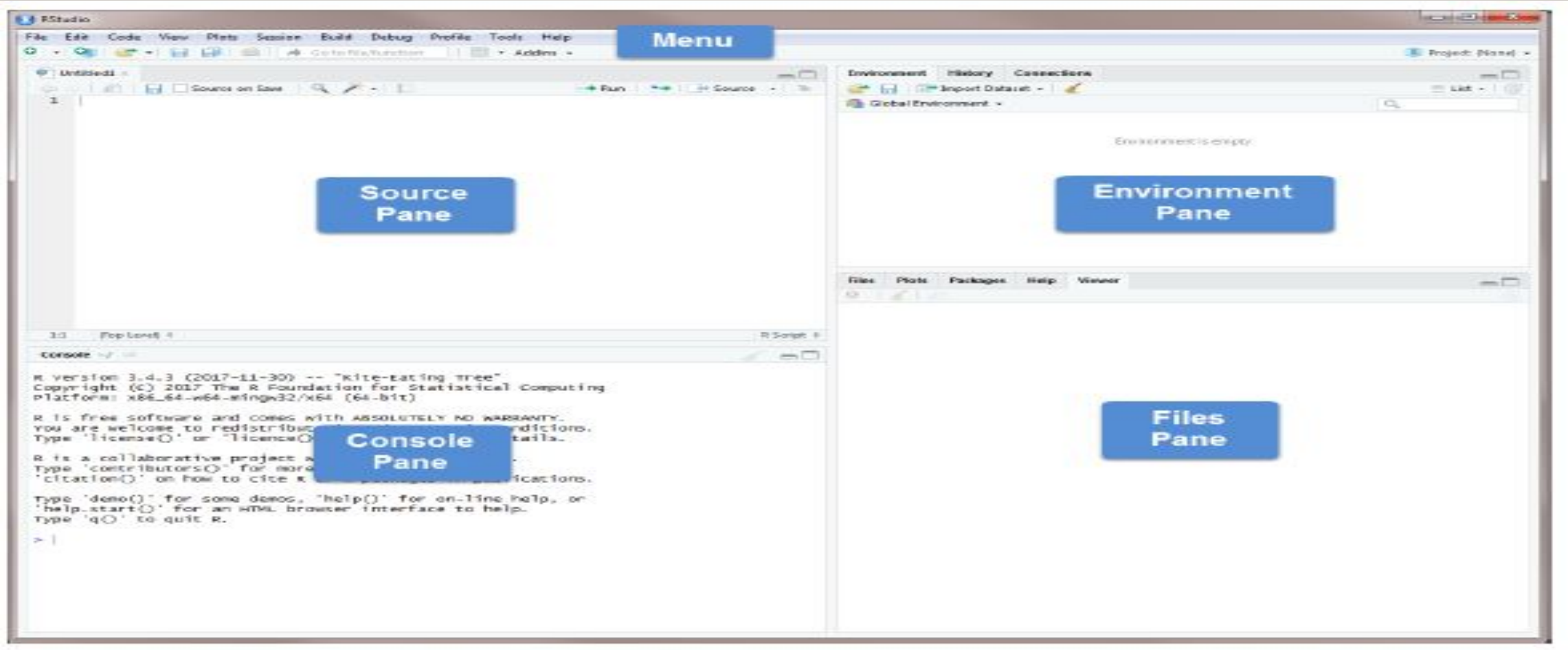
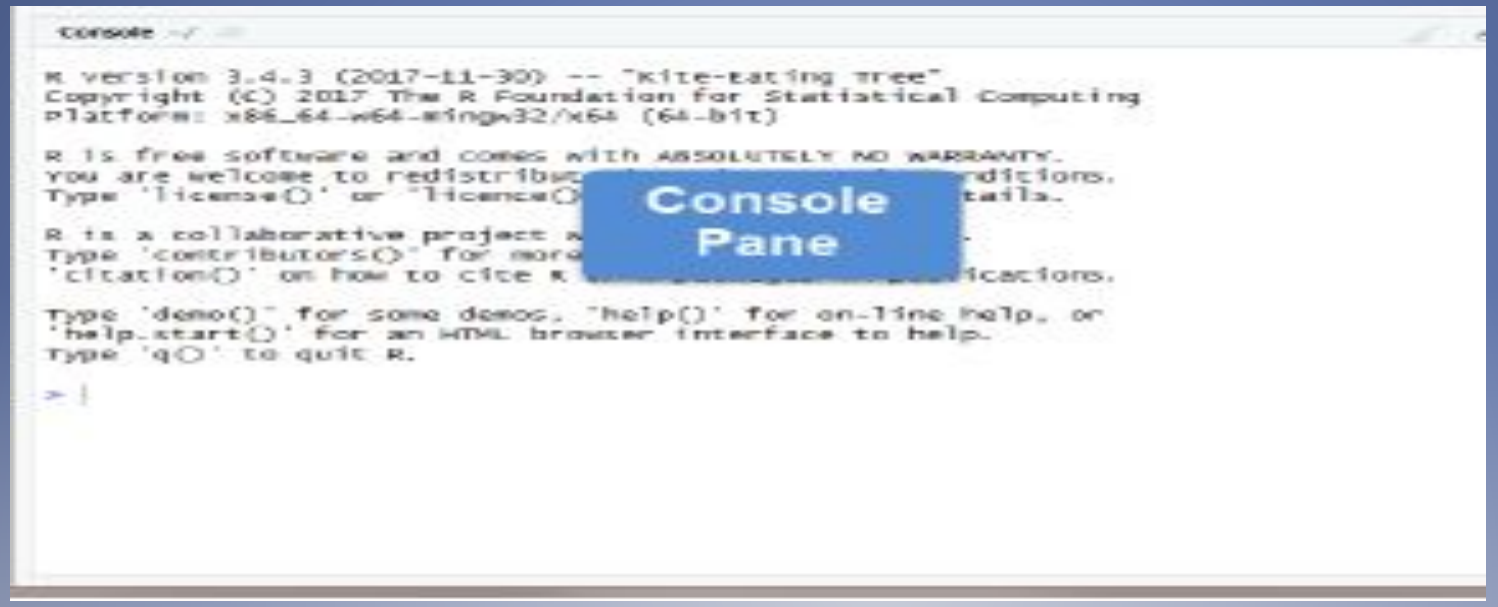
RSTUDIO GUI/IDE

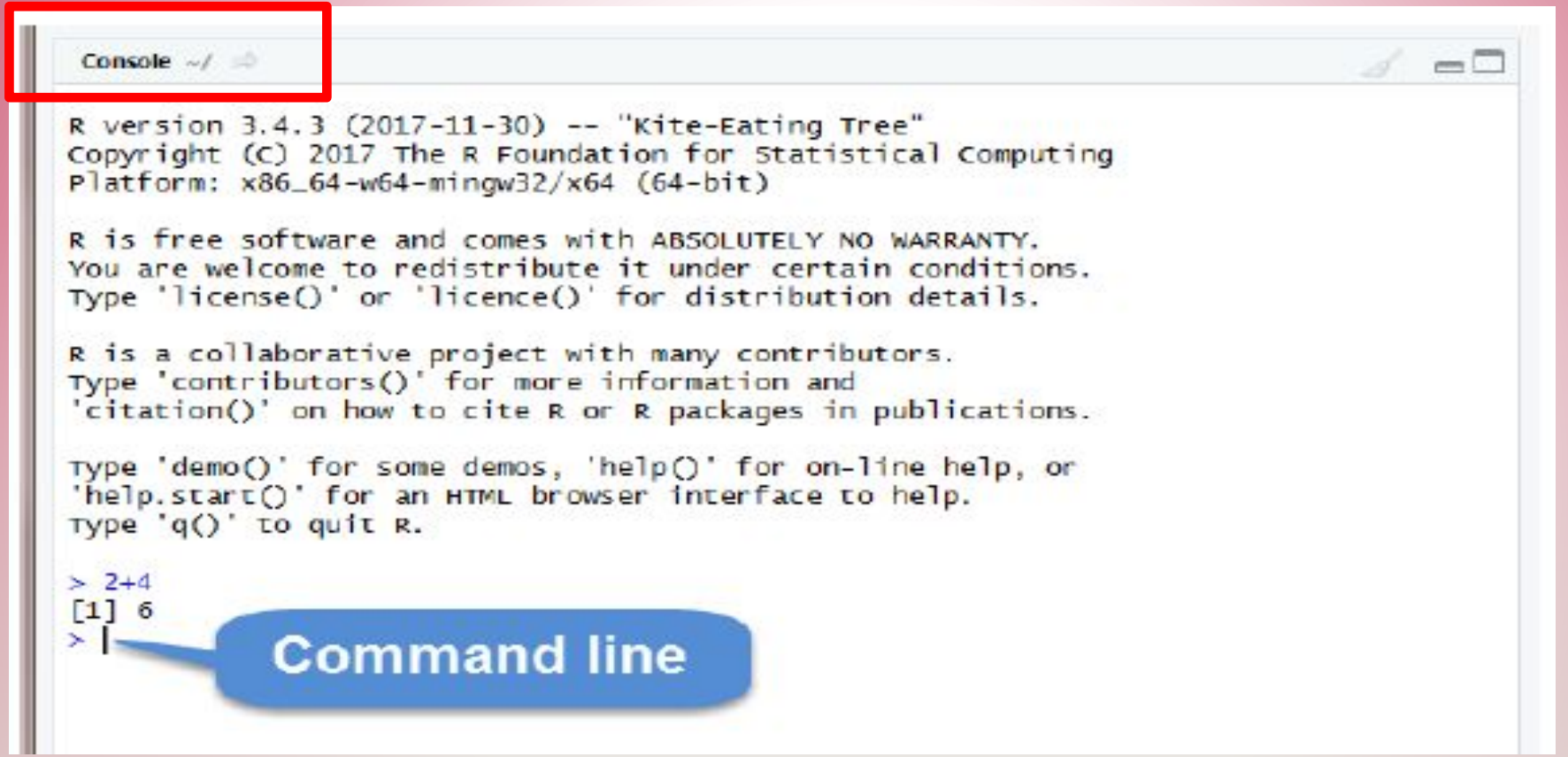


The Source Pane is a text editor where you can type your code before running it. You can save your code in a text file called a script. Scripts have typically file names with the extension **.R**

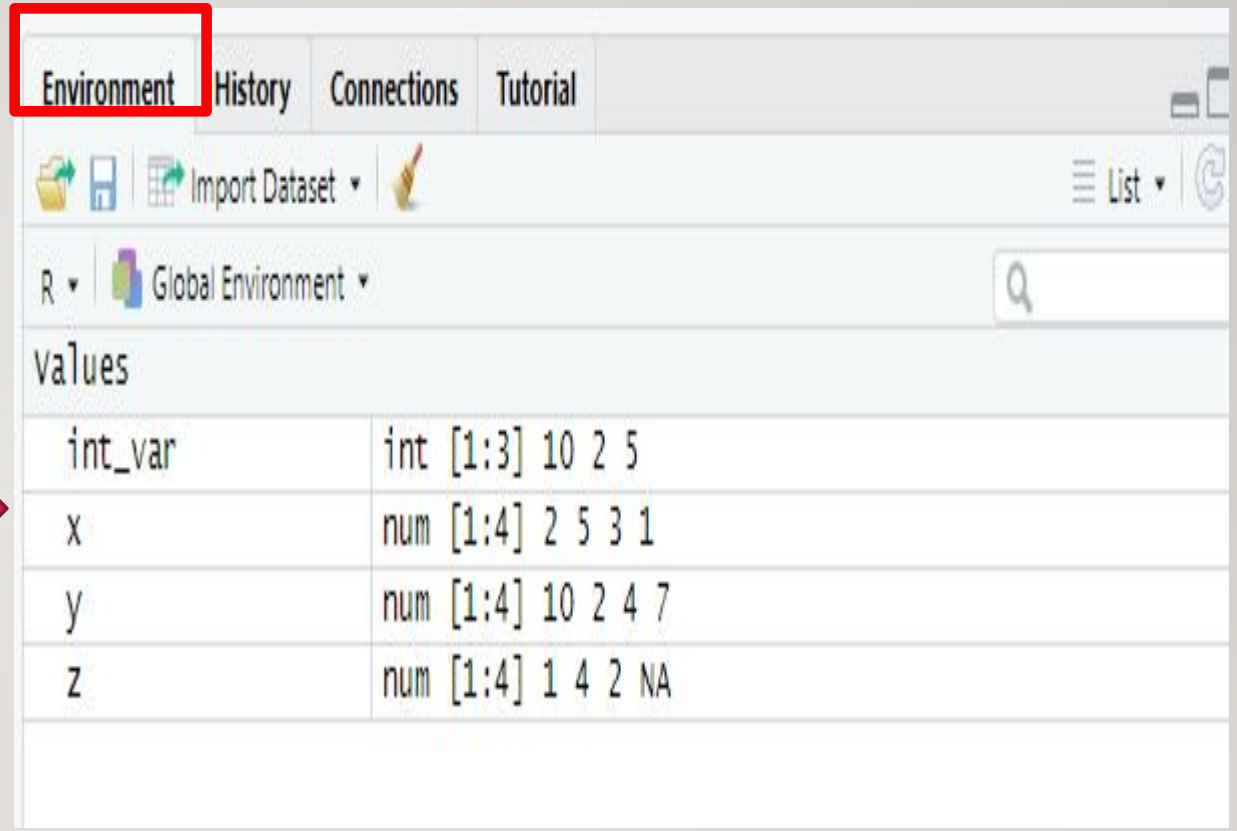


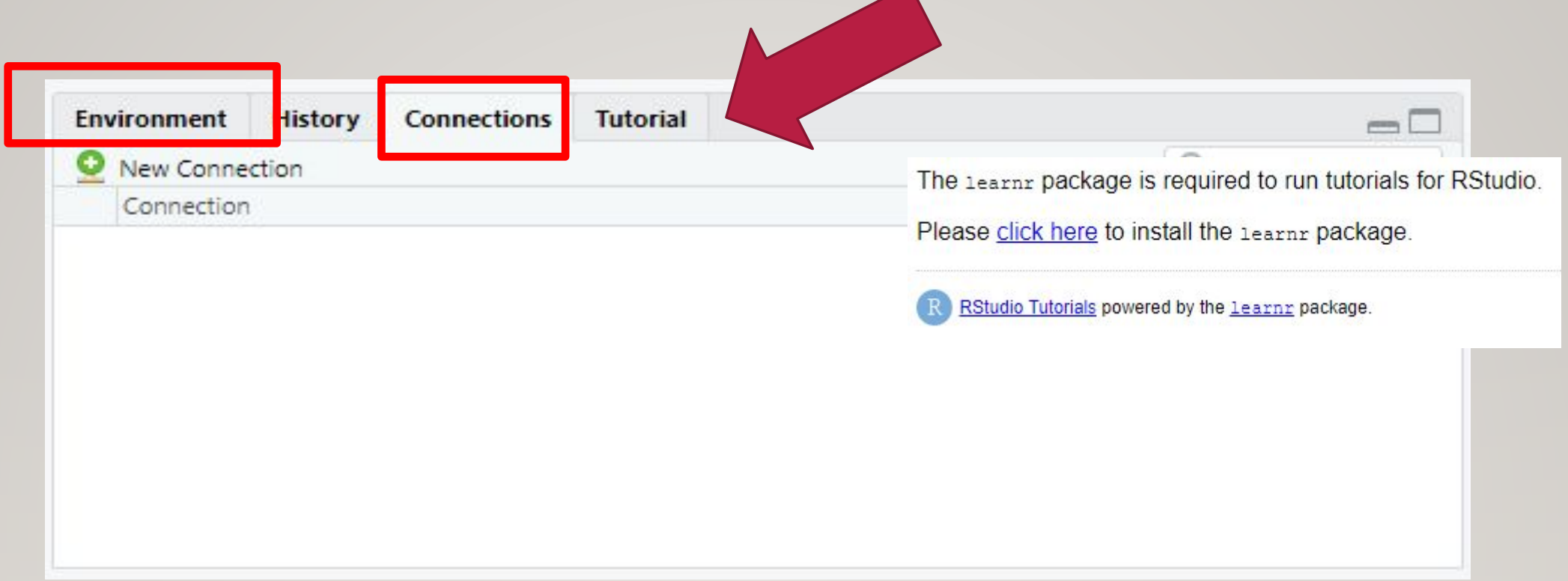
The Console Pane is the interface to R. If you opened R directly instead of opening RStudio, you would see just this console. You can type commands directly in the console. The console displays the results of any command you run.

To clear the console, you press **Ctrl+L** or type **cat("\014")** in the command line.


Console ~/
R version 3.4.3 (2017-11-30) -- "Kite-Eating Tree"
Copyright (C) 2017 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.
> 2+4
[1] 6
>
Command line

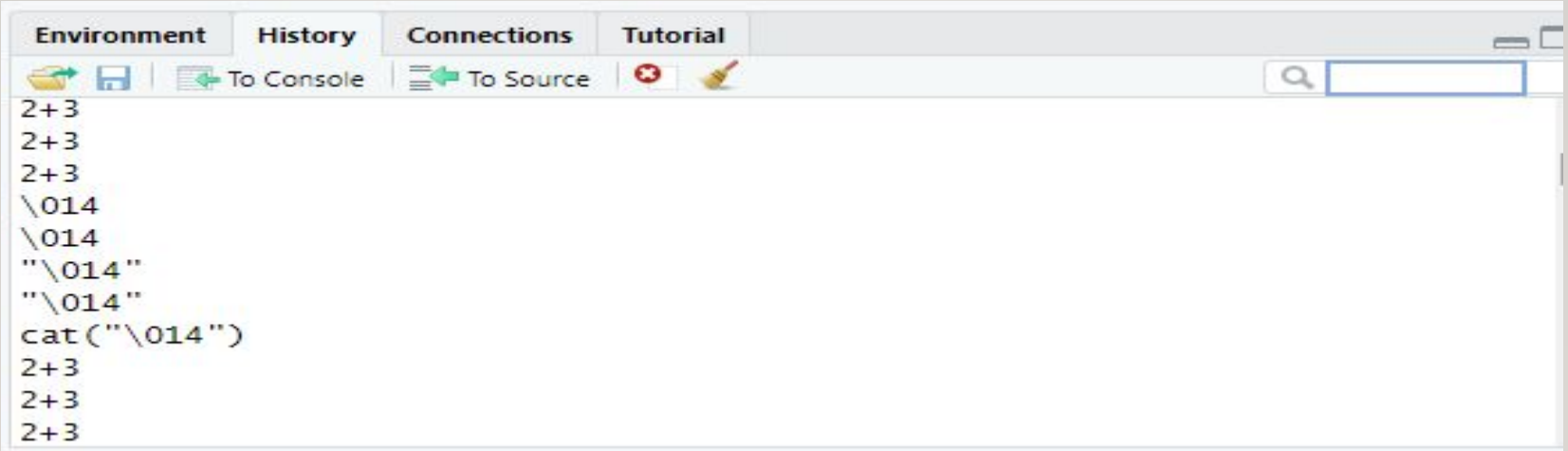
input.r
Untitled1*
Source on Save
1 int_var <- c(10L, 2L, 5L)
2
2:1
(Top Level)
Console
Terminal
Jobs
~/
> x<- c(2, 5, 3, 1)
> y <- c(10, 2, 4, 7)
> z <- c(1, 4, 2, NA)


Environment
History
Connections
Tutorial
Import Dataset
List
R
Global Environment
Values
int_var
int [1:3] 10 2 5
x
num [1:4] 2 5 3 1
y
num [1:4] 10 2 4 7
z
num [1:4] 1 4 2 NA



The Environment Pane includes an Environment and a History tab. If you are using RStudio 1.1 or a later version, you will also see a Connections tab. The Connections tab makes it easy to connect to any data source on your system. You will not see this tab on previous versions of RStudio.

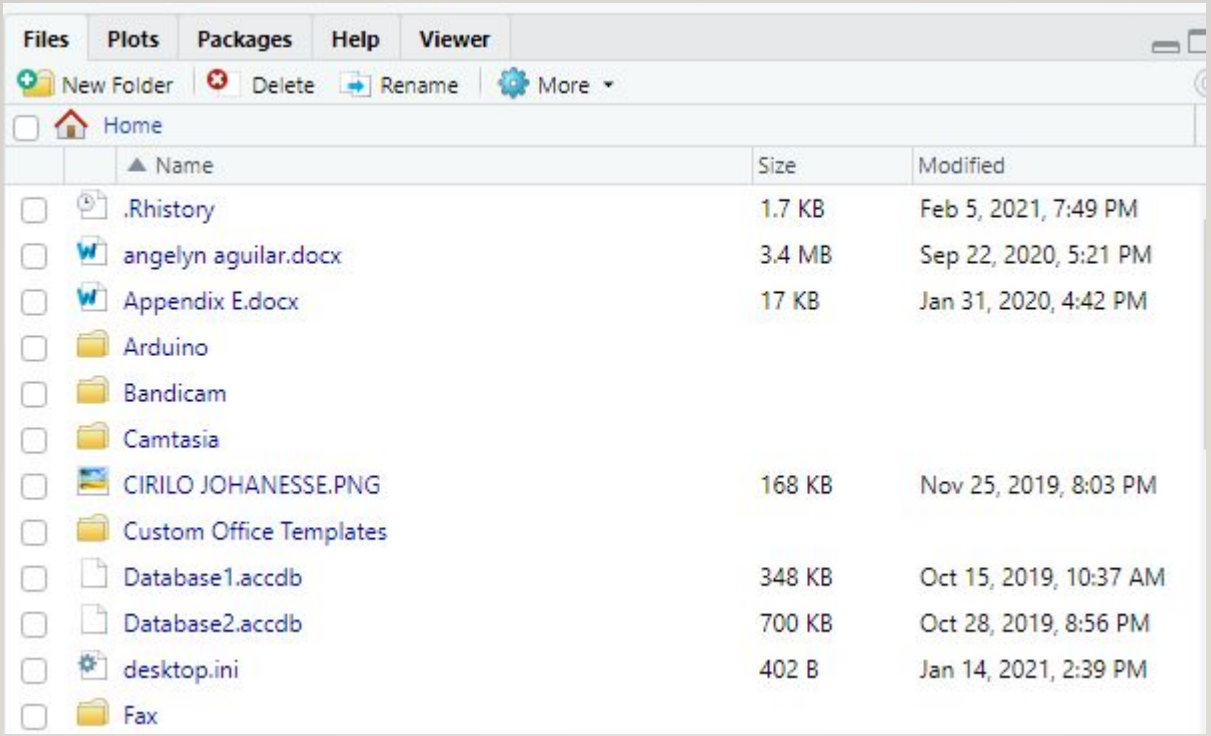
History Tab on Environment Pane



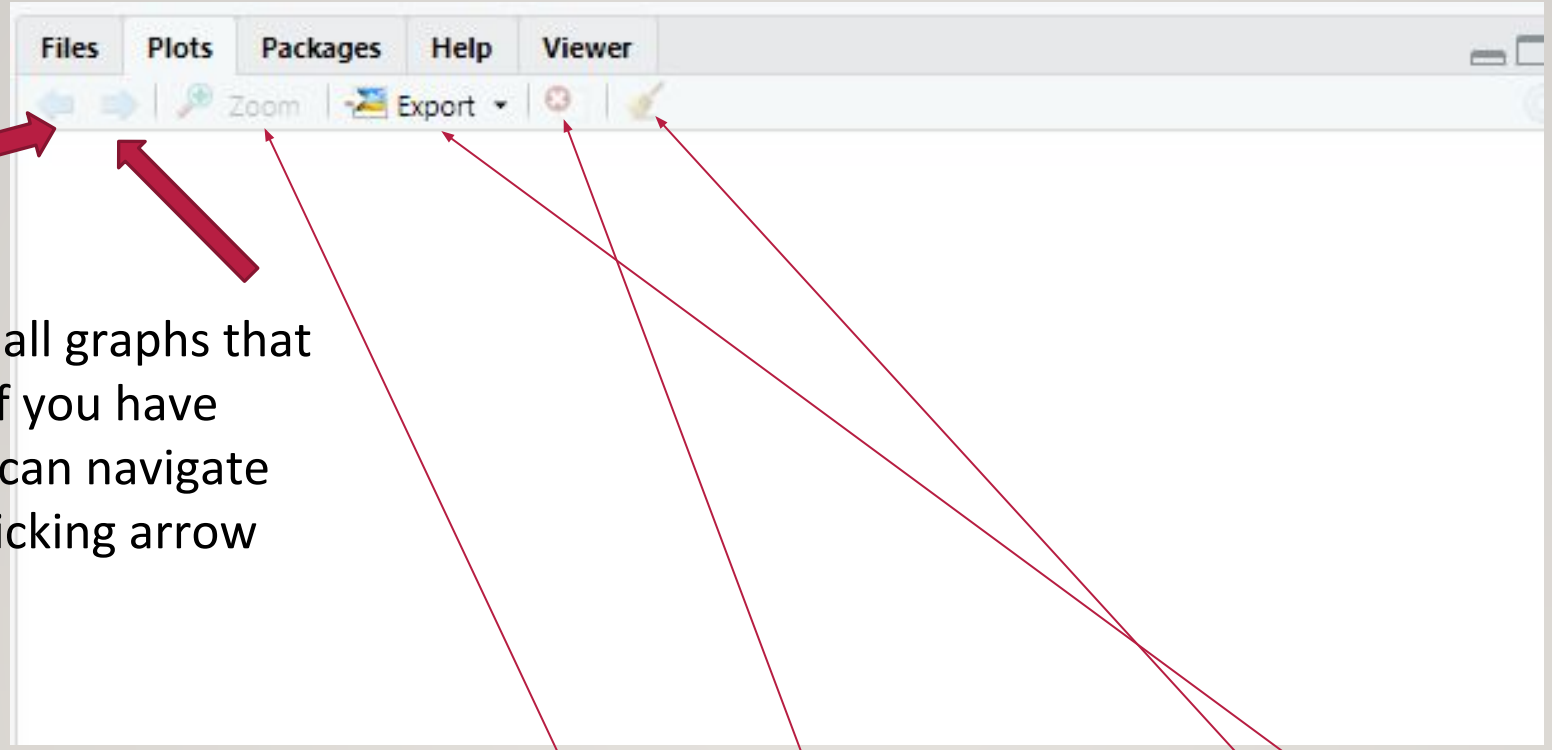
The History tab keeps a record of all the commands you have run.

To copy a command from the history into the console and source or clear the history.

FILES Pane



The Files tab displays the contents of your working directory. R reads files from and saves files into the working directory. You can find out which directory R is using by typing **getwd()** in the command line.



The Plot tab shows all graphs that you have created. If you have multiple plots, you can navigate through them by clicking arrow left and right.

Click Zoom to open the plot in another window. Click to export your plot as an image file or a pdf.

To remove a single plot, click “x”. To remove all plots, click brush icon or type **dev.off()** in the command line.

RStudio

File Edit Code View Plots Session Project Build Tools Help

HousePets.R | MyRscript.R | house.pets | A | B | Graphs.R*

Source on Save | Run | Source

```
1
2  library(car)  # By John Fox and Sanford Weisberg
3  library(rgl)  # By Daniel Adler and Duncan Murdoch
4
5  # Scatterplot per group
6
7  scatterplot(prestige ~ income|type, boxplots=FALSE, span=0.75, data=Prestige)
8
9  # Scatterplots in matrix form
10
11 scatterplotMatrix(~ prestige + income + education, span=0.7,data=Prestige)
12
13 # 3D graph, scatter3d is from the --car package. It will open in a separate window.
14
15 scatter3d(prestige ~ income + education, id.n=3, data=Duncan)
```

11:7 (Top Level) R Script

Workspace | History

Import Dataset

Data	
A	4x2 double matrix
B	4x2 double matrix
house.pets	3 obs. of 4 variables
Values	
feed	character[3]
pets	character[3]
run	numeric[3]
weight	numeric[3]

Files | Plots | Packages | Help

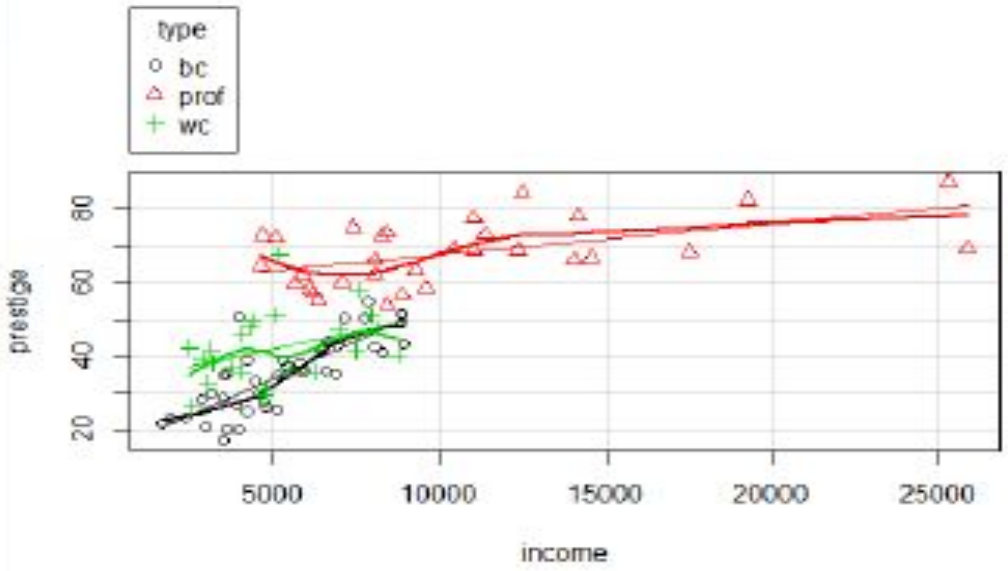
Zoom | Export | Clear All

Console H:/MyData/RFiles/

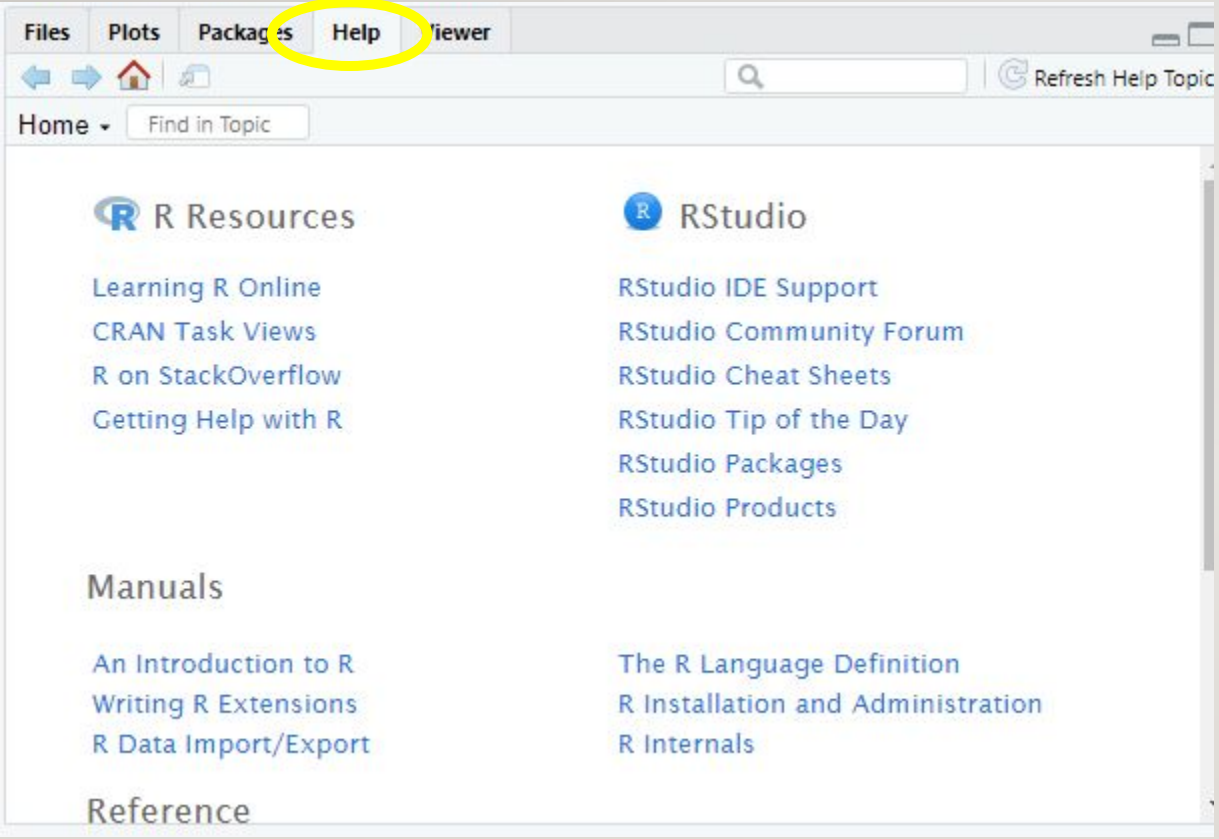
```
> scatterplot(prestige~income|type, boxplots=FALSE, span=0.75, data=Prestige)
>
```

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

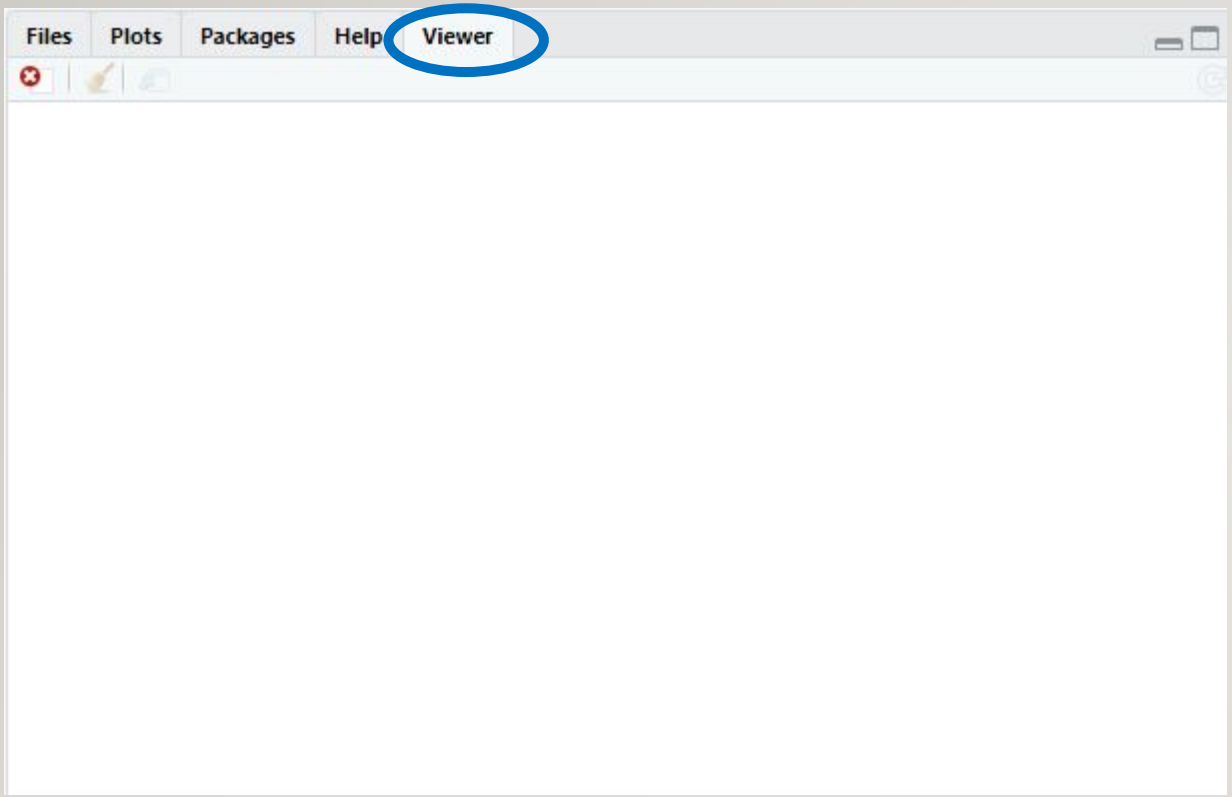
See next slide to see what happens when you have more than one graph



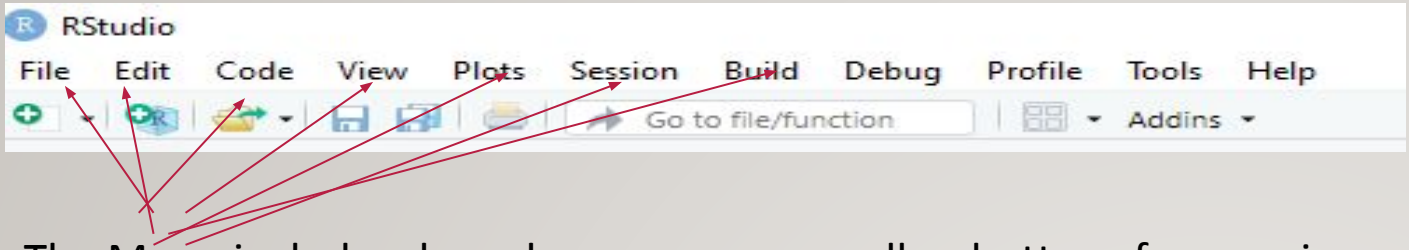
HELP TAB



The help tab has built-in documentation for packages and functions in R. The help is automatically available for any loaded packages.



The Viewer tab displays HTML output. R packages such as R Markdown and Shiny create HTML outputs that you can view in the Viewer tab.



The Menu includes drop-down menus as well as buttons for opening, saving, and viewing or editing datasets. Here we list a few of the things you can do from each drop-down menu:

File: Create new file, save data, open previously saved file.

Edit: Search for text, clear console, undo/redo.

Code: Insert code sections, run code.

View: Move around tabs without clicking.

Plots: Save Plots, Navigate through Plots.

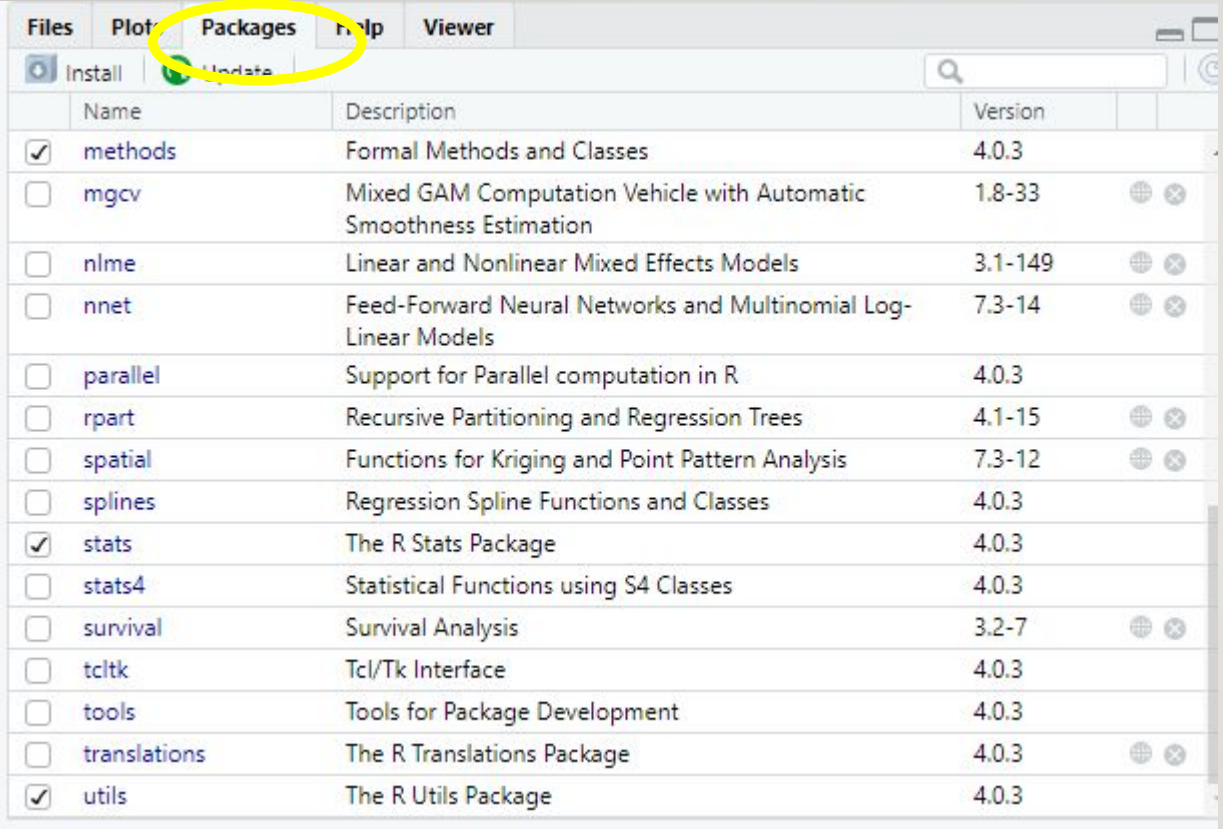
Session: Restart R session, set working directory, save session.

Build/Debug/Profile: Advanced tools for programming

Tools: Install packages, get information on version of RStudio

Help: Help files, cheat sheets, and links to documentation.

PACKAGES TAB



An **R package** typically includes code, data, documentation for the package and functions inside, and tests to check everything works as it should.

The variety of R packages is one of the reasons R is so powerful. As of February 2017, there were over 12,000 packages available in the official R repository (https://cloud.r-project.org/).

SOURCES OF Packages:

CRAN (Comprehensive R Archive Network
CRANTASTIC
Git Hub