

RStudio

For Beginners

Outline

- How do download Rstudio
- How to create a shortcut at your desktop
- Getting used to the environment
- Create a Script and Save a Script
- How to Personalize
- Pane Layout
- Basics
- Installing a Package
- Simple Example Plot
- Working Directory

HOW TO DOWNLOAD RSTUDIO



🔍 RStudio download

🔍 **rstudio download**

🔍 rstudio download **packages**

🔍 rstudio download **ubuntu**

🔍 rstudio download **3.6.3**

🔍 rstudio download **file**

🔍 rstudio download **anaconda**

🔍 rstudio download **crack**

🔍 rstudio download **old version**

🔍 rstudio download **older version**

🔍 rstudio download **library**

HOW TO DOWNLOAD RSTUDIO

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https://www.google.com/search?safe=active&source=hp&ei=KBE1X8_eC... Search

Getting Started

Google

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About 6,850,000 results (0.38 seconds)

rstudio.com > products > rstudio > download ▾
Download RStudio - RStudio

Download RStudio. RStudio is a set of integrated tools designed to help you be more productive with R. It includes a console, syntax-highlighting editor that ...

Older Versions of RStudio
If you need to use an older version of RStudio for compatibility ...

Download RStudio Desktop Pro
RStudio Desktop Pro is governed by a time-limited license, and ...

R Packages
The tidyverse is an opinionated collection of R packages ...

More results from rstudio.com »

RStudio Server
Other Platforms - Debian/Ubuntu - Red Hat/CentOS - ...

RStudio IDE Features
RStudio is the premier integrated development environment for R ...

RStudio Preview
A preview release of RStudio v1.3.1073-1 is now available for ...

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HOW TO DOWNLOAD RSTUDIO

Download RStudio - RStudio

https://rstudio.com/products/rstudio/download/

Getting Started

	RStudio Desktop Open Source License Free Download Learn more	RStudio Desktop Commercial License \$995 /year Buy Learn more	RStudio Server Open Source License Free Download Learn more	RStudio Server Pro Commercial License \$4,975 /year (5 Named Users) Buy Evaluation Learn more
Integrated Tools for R	✓	✓	✓	✓
Priority Support		✓		✓
Access via Web Browser			✓	✓
Enterprise Security				✓
Project Sharing				✓

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8


Download RStudio - RStudio

https://rstudio.com/products/rstudio/download/#download

Getting Started

RStudio Desktop 1.3.1073 - Release Notes


1. **Install R.** RStudio requires R 3.0.1+.
2. Download RStudio Desktop. Recommended

 **DOWNLOAD RSTUDIO FOR WINDOWS**
1.3.1073 | 171.62MB

Requires Windows 10/8/7 (64-bit)

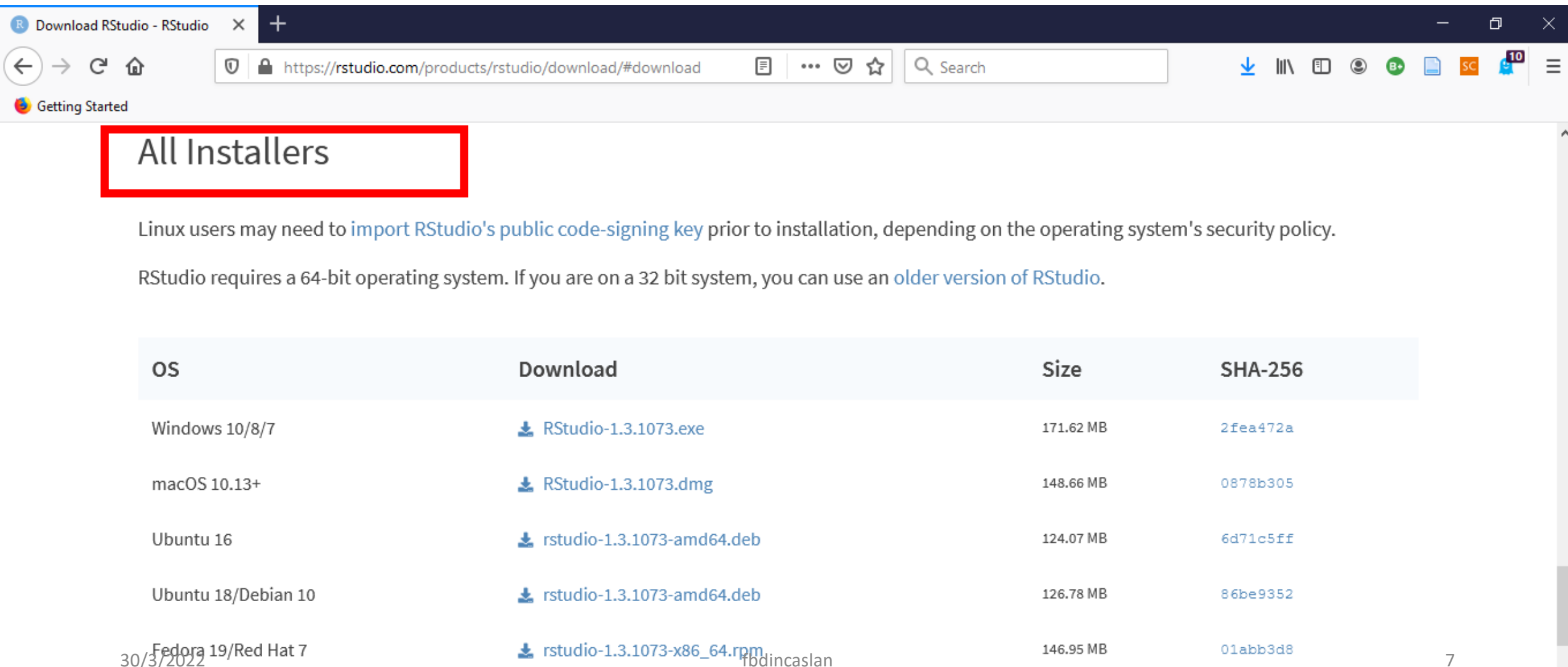
If you havent downlaoded R before, please downlaod R first.

R is the main program.Rstudio is the IDE (Integrated Development Environment).



HOW TO DOWNLOAD RSTUDIO

Scroll down and see other versions for different operating systems if you are not using Windows>7.



The screenshot shows a web browser window with the address bar displaying <https://rstudio.com/products/rstudio/download/#download>. The page title is "Download RStudio - RStudio". The main heading "All Installers" is highlighted with a red box. Below the heading, there is a paragraph of text and a table of download links for various operating systems.

Getting Started

All Installers

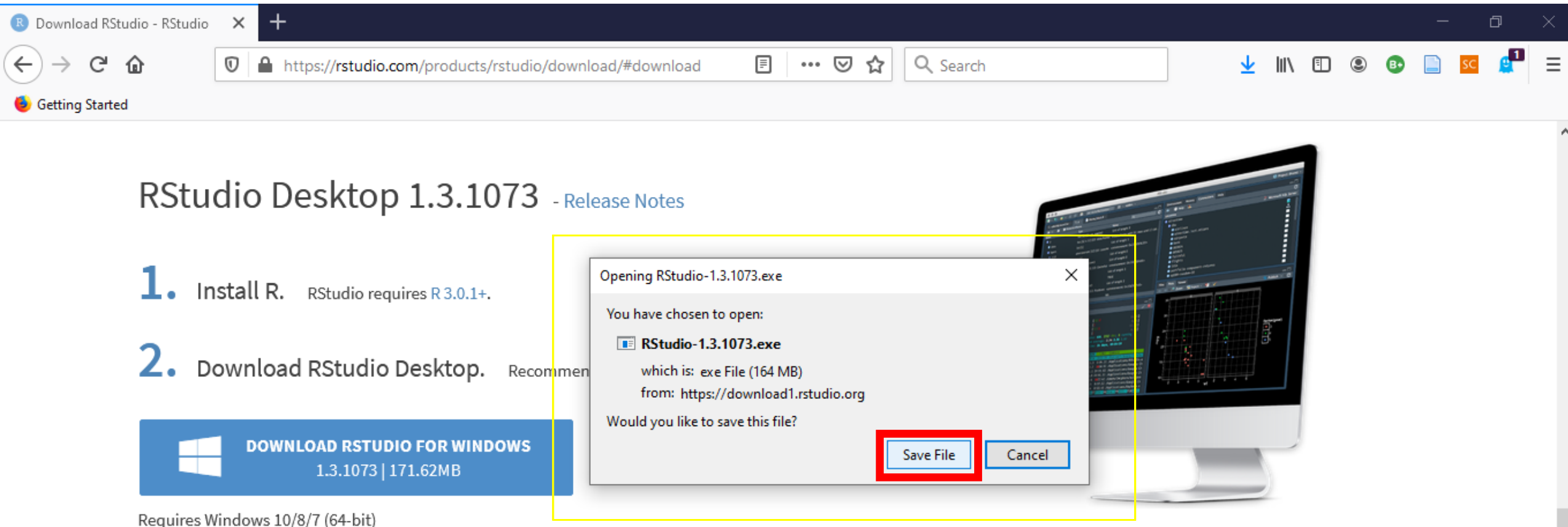
Linux users may need to [import RStudio's public code-signing key](#) prior to installation, depending on the operating system's security policy.

RStudio requires a 64-bit operating system. If you are on a 32 bit system, you can use an [older version of RStudio](#).

OS	Download	Size	SHA-256
Windows 10/8/7	RStudio-1.3.1073.exe	171.62 MB	2fea472a
macOS 10.13+	RStudio-1.3.1073.dmg	148.66 MB	0878b305
Ubuntu 16	rstudio-1.3.1073-amd64.deb	124.07 MB	6d71c5ff
Ubuntu 18/Debian 10	rstudio-1.3.1073-amd64.deb	126.78 MB	86be9352
Fedora 19/Red Hat 7	rstudio-1.3.1073-x86_64.rpm	146.95 MB	01abb3d8

HOW TO DOWNLOAD RSTUDIO

Click for download. Then save the downloaded file to run.



The screenshot shows a web browser window with the URL <https://rstudio.com/products/rstudio/download/#download>. The page title is "RStudio Desktop 1.3.1073 - Release Notes". It lists two steps: "1. Install R. RStudio requires R 3.0.1+." and "2. Download RStudio Desktop. Recommended". A blue button labeled "DOWNLOAD RSTUDIO FOR WINDOWS" is visible, with the text "1.3.1073 | 171.62MB" and "Requires Windows 10/8/7 (64-bit)" below it. A yellow box highlights a Windows file save dialog that appears over the button. The dialog title is "Opening RStudio-1.3.1073.exe". It contains the text: "You have chosen to open:", "☒ RStudio-1.3.1073.exe", "which is: exe File (164 MB)", "from: https://download1.rstudio.org", and "Would you like to save this file?". At the bottom of the dialog are two buttons: "Save File" (highlighted with a red box) and "Cancel".

RStudio Desktop 1.3.1073 - Release Notes

1. Install R. RStudio requires R 3.0.1+.
2. Download RStudio Desktop. Recommended

DOWNLOAD RSTUDIO FOR WINDOWS
1.3.1073 | 171.62MB
Requires Windows 10/8/7 (64-bit)

Opening RStudio-1.3.1073.exe

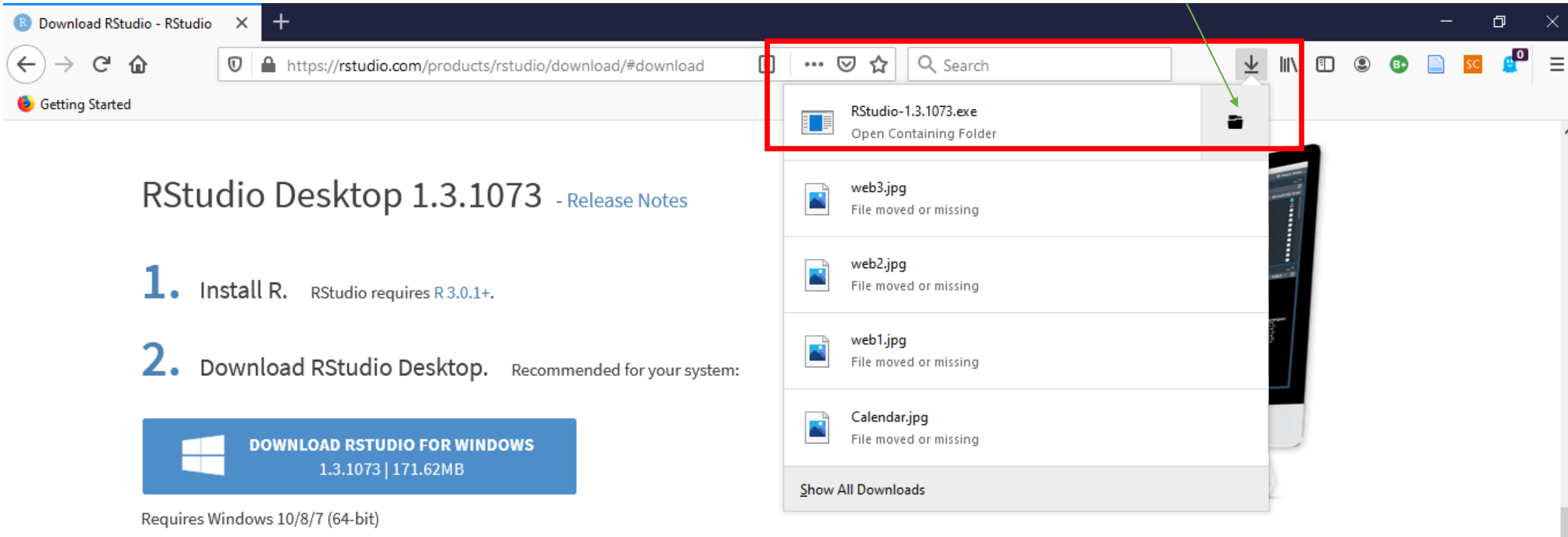
You have chosen to open:

☒ RStudio-1.3.1073.exe
which is: exe File (164 MB)
from: https://download1.rstudio.org

Would you like to save this file?

Save File Cancel

It is downloaded. Click the file icon to open the file location to run Rstudio.



The screenshot shows the RStudio Desktop 1.3.1073 download page. The page has a dark blue header with the RStudio logo and the text "Download RStudio - RStudio". The main content area is white and features the title "RStudio Desktop 1.3.1073 - Release Notes". Below the title are two numbered steps: "1. Install R. RStudio requires R 3.0.1+." and "2. Download RStudio Desktop. Recommended for your system:". A blue button labeled "DOWNLOAD RSTUDIO FOR WINDOWS" is prominently displayed, with the version "1.3.1073 | 171.62MB" and the requirement "Requires Windows 10/8/7 (64-bit)" below it. On the right side, a Windows download bar is visible, showing a list of downloaded files. The first file, "RStudio-1.3.1073.exe", is highlighted with a red box, and a green arrow points to its file icon. Other files listed include "web3.jpg", "web2.jpg", "web1.jpg", and "Calendar.jpg", all marked as "File moved or missing". A "Show All Downloads" link is at the bottom of the list.

Download RStudio - RStudio

https://rstudio.com/products/rstudio/download/#download

Getting Started

RStudio Desktop 1.3.1073 - [Release Notes](#)

1. Install R. RStudio requires [R 3.0.1+](#).
2. Download RStudio Desktop. Recommended for your system:

DOWNLOAD RSTUDIO FOR WINDOWS
1.3.1073 | 171.62MB

Requires Windows 10/8/7 (64-bit)

RStudio-1.3.1073.exe
Open Containing Folder

web3.jpg
File moved or missing

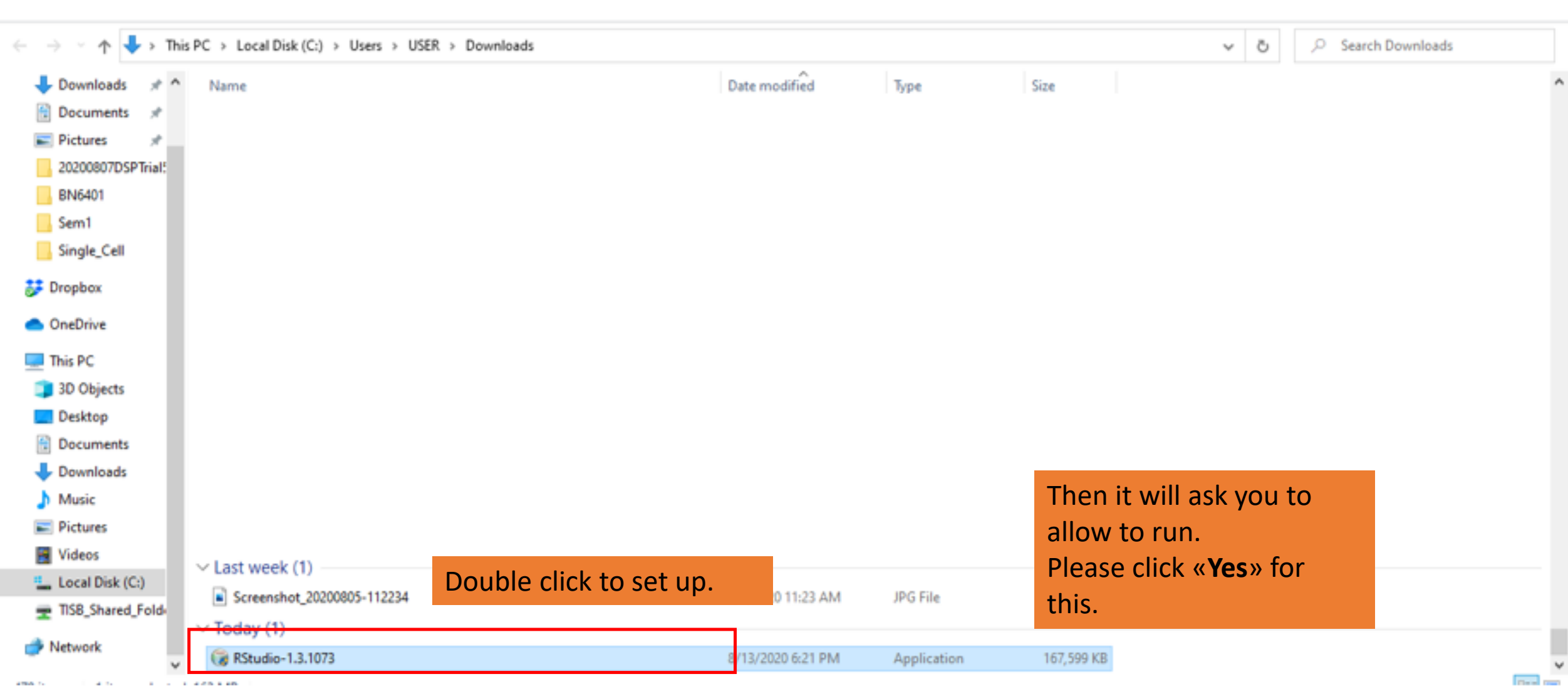
web2.jpg
File moved or missing

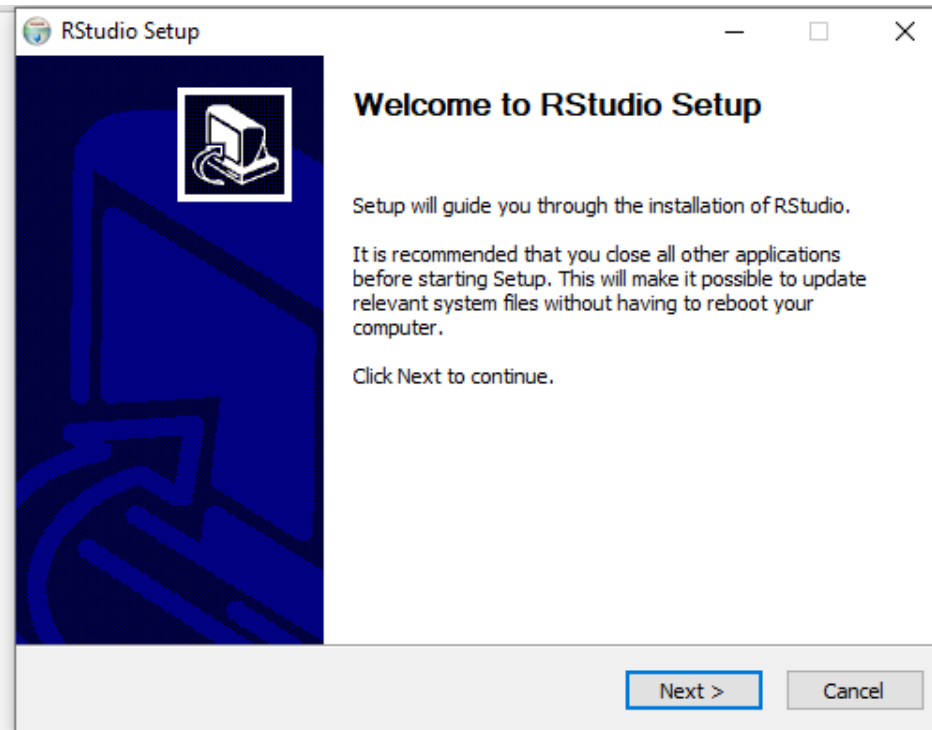
web1.jpg
File moved or missing

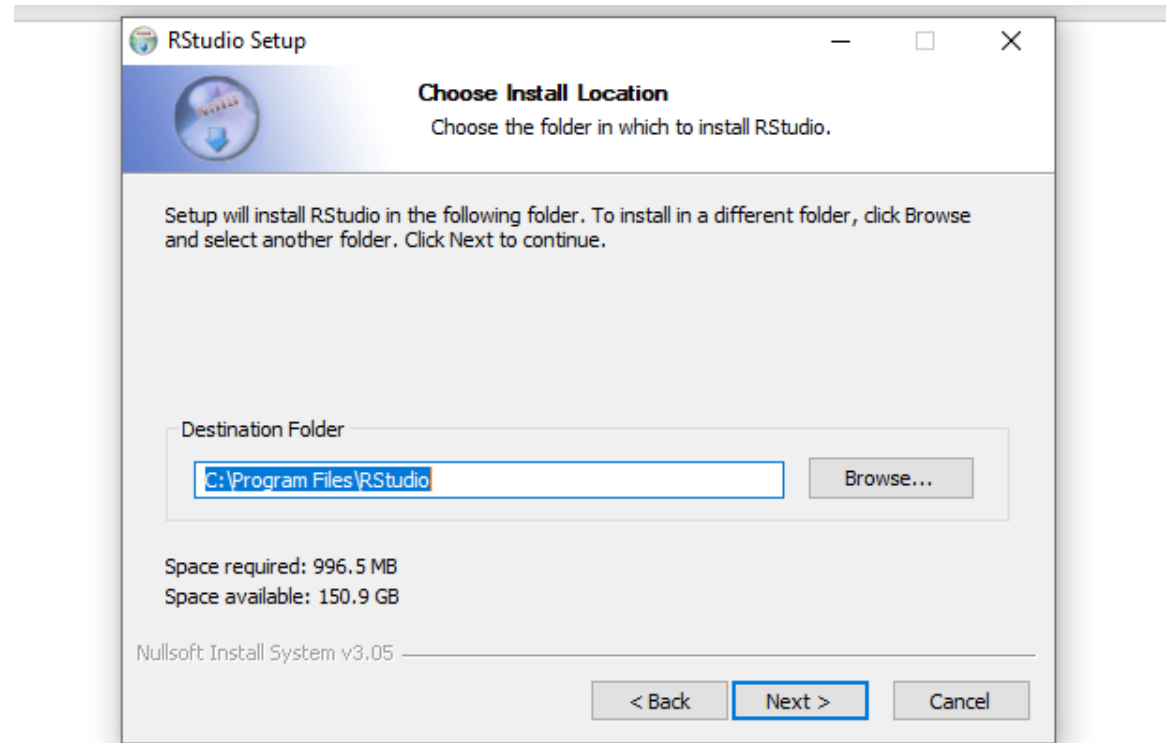
Calendar.jpg
File moved or missing

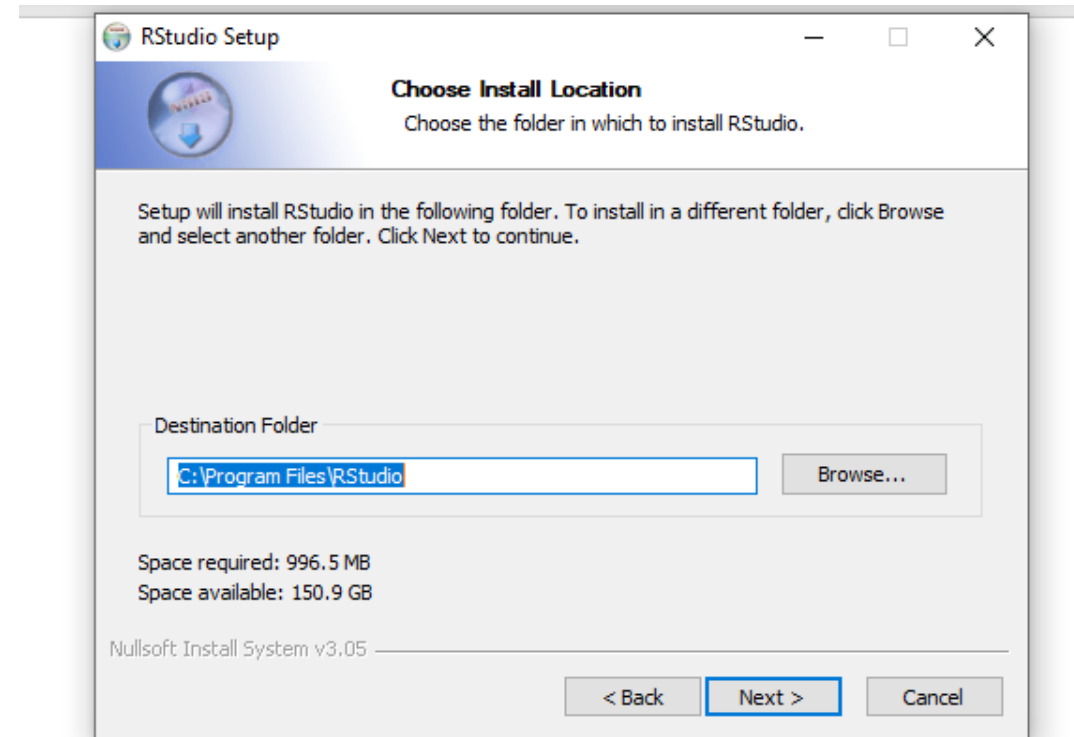
[Show All Downloads](#)

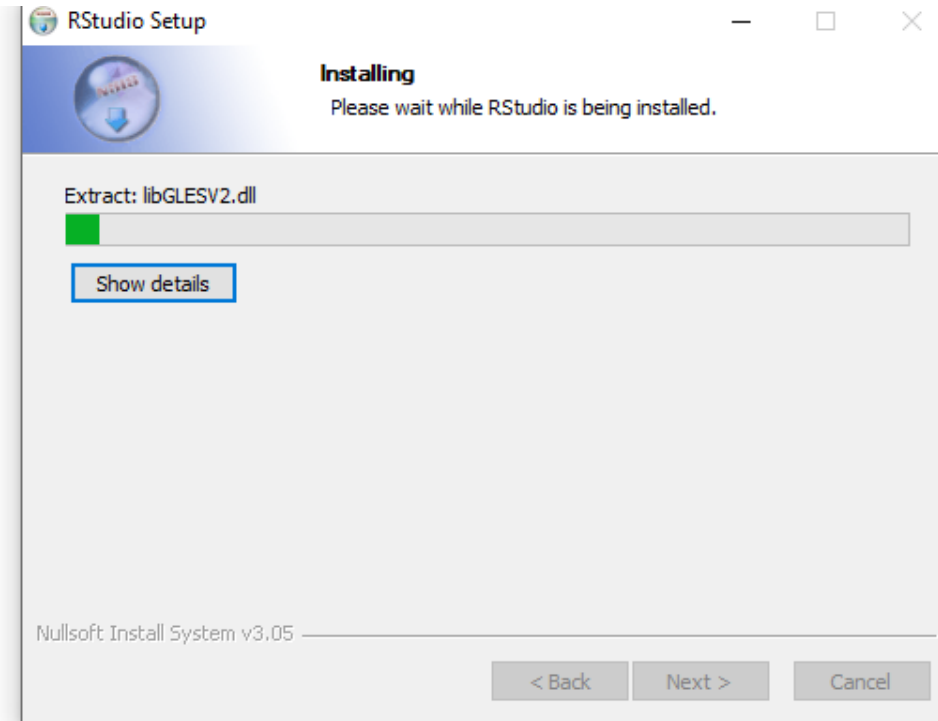
HOW TO DOWNLOAD RSTUDIO

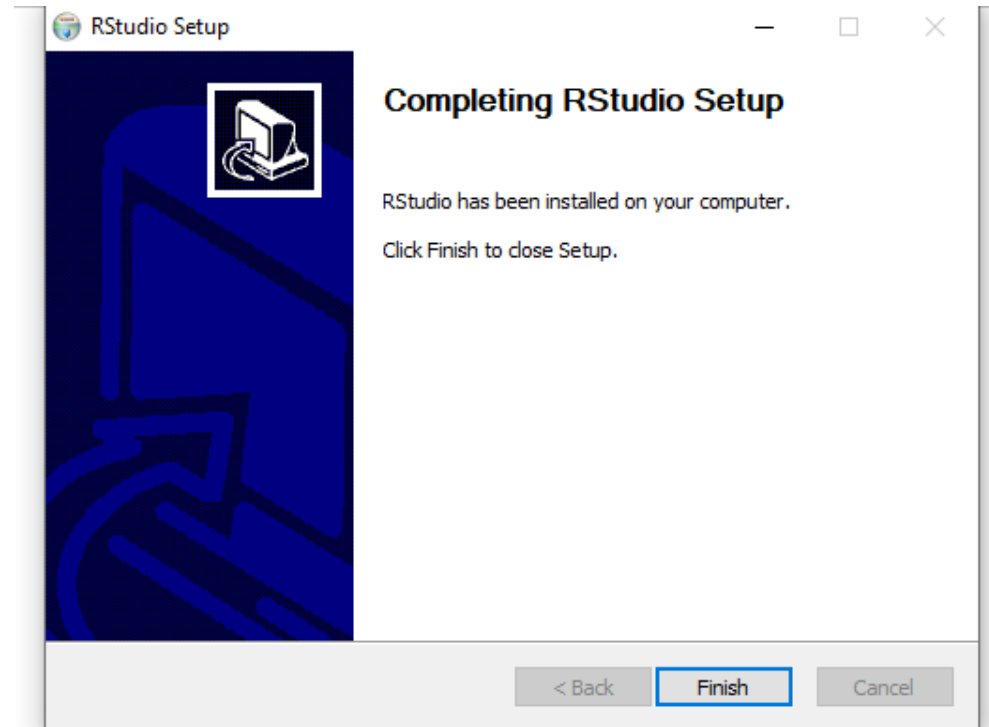




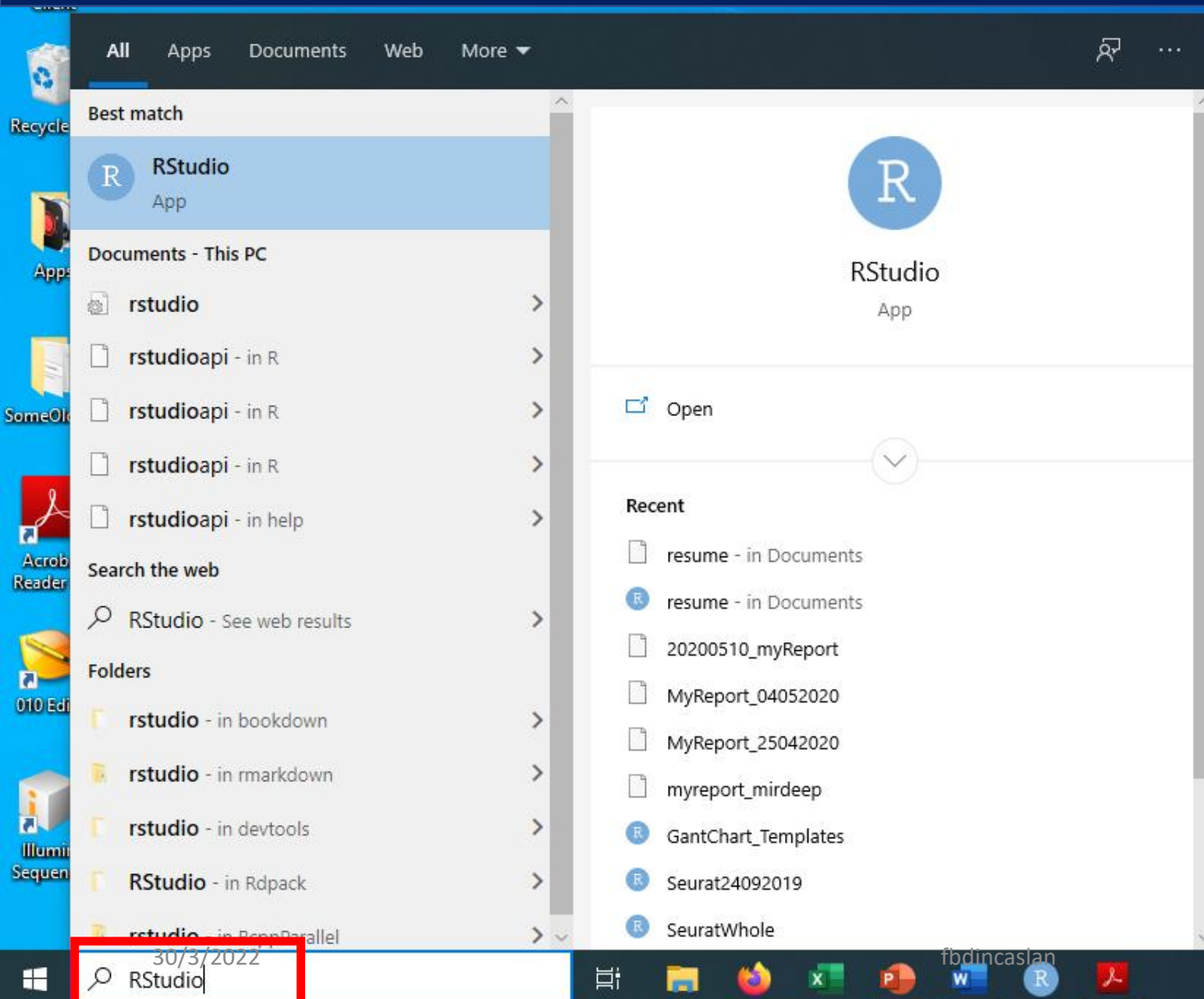








CREATE A SHORTCUT IN YOUR DESKTOP (If you havent created, for easy access)



The screenshot shows a Windows 10 desktop with a blue background. A search window is open, displaying results for 'RStudio'. The 'Best match' section shows 'RStudio App' with a blue circular icon containing a white 'R'. Below this, the 'Documents - This PC' section lists several files and folders, including 'rstudio', 'rstudioapi - in R', and 'RStudio - in Rdpack'. The 'Search the web' section shows 'RStudio - See web results'. The 'Folders' section lists 'rstudio' and 'RStudio' in various locations. The 'Recent' section lists several files, including 'resume - in Documents', '20200510_myReport', 'MyReport_04052020', 'MyReport_25042020', 'myreport_mirdeep', 'GantChart_Templates', 'Seurat24092019', and 'SeuratWhole'. The taskbar at the bottom shows the date and time as 30/3/2022 16:02 PM, and the search bar contains the text 'RStudio'.

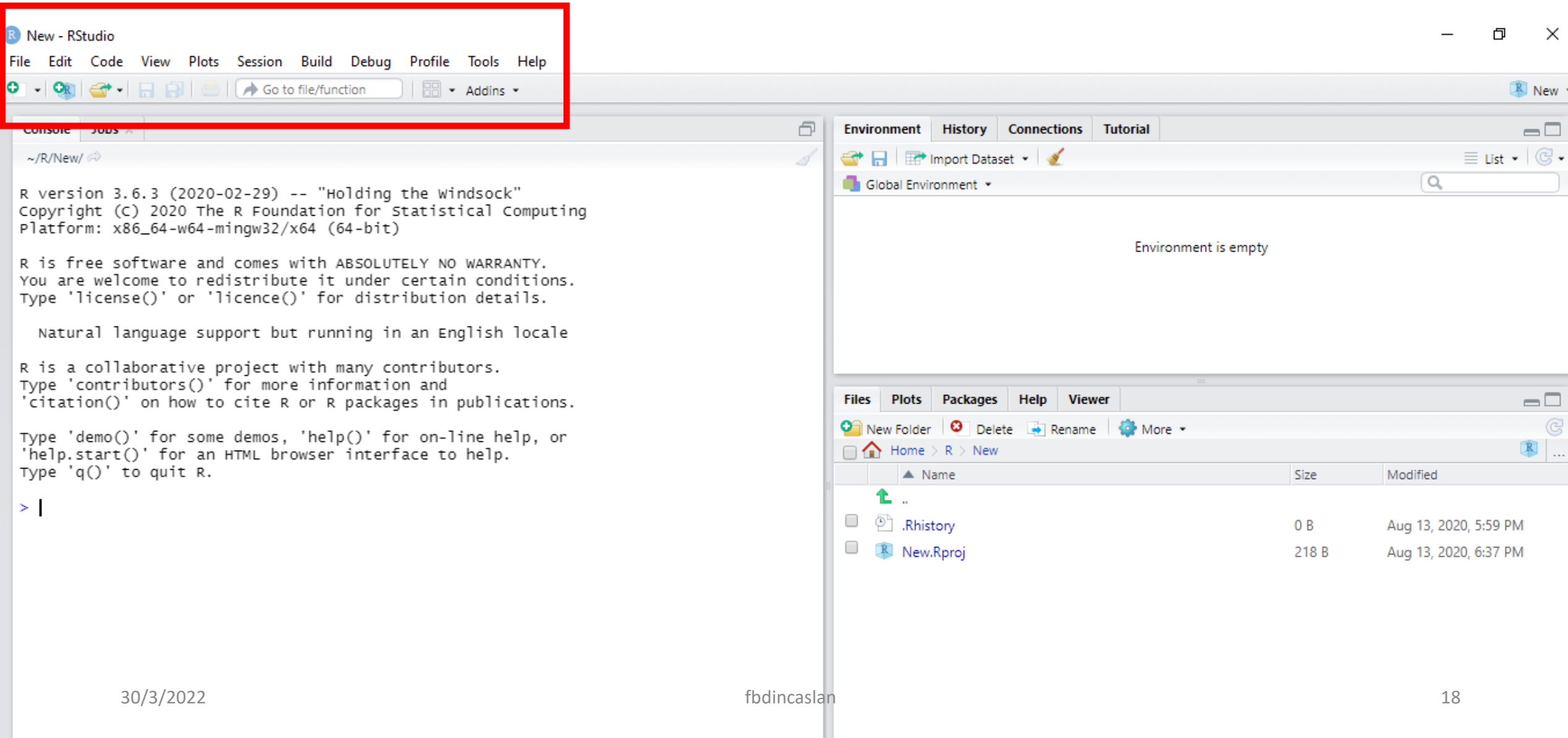
Windows Search Results for RStudio:

- Best match**
 - RStudio App
- Documents - This PC**
 - rstudio
 - rstudioapi - in R
 - rstudioapi - in R
 - rstudioapi - in R
 - rstudioapi - in help
- Search the web**
 - RStudio - See web results
- Folders**
 - rstudio - in bookdown
 - rstudio - in markdown
 - rstudio - in devtools
 - RStudio - in Rdpack
 - rstudio - in Rdpack
- Recent**
 - resume - in Documents
 - resume - in Documents
 - 20200510_myReport
 - MyReport_04052020
 - MyReport_25042020
 - myreport_mirdeep
 - GantChart_Templates
 - Seurat24092019
 - SeuratWhole

CREATE A SHORTCUT IN YOUR DESKTOP



Then, left click twice to open.



The screenshot displays the RStudio application window. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. The toolbar below the menu contains icons for creating new files, opening files, saving, and navigating. The console window on the left shows the R startup message and the prompt `> |`. The environment window on the right indicates that the environment is empty. The file explorer at the bottom shows the current directory structure, including a new R project folder named `New.Rproj`.

Console Output:

```
~/R/New/

R version 3.6.3 (2020-02-29) -- "Holding the windsock"
Copyright (C) 2020 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.

Natural language support but running in an English locale

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.

> |
```

Environment Window:

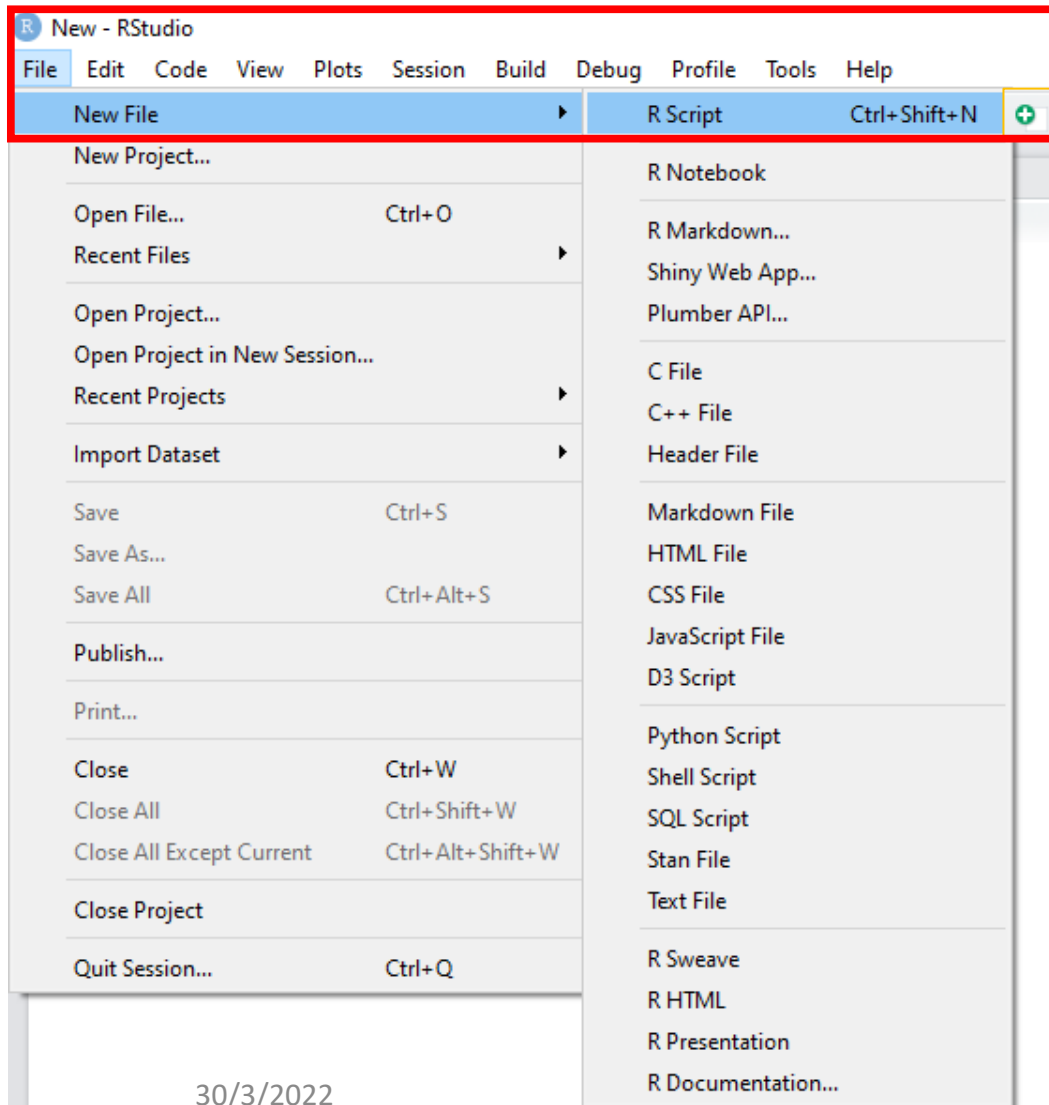
Global Environment

Environment is empty

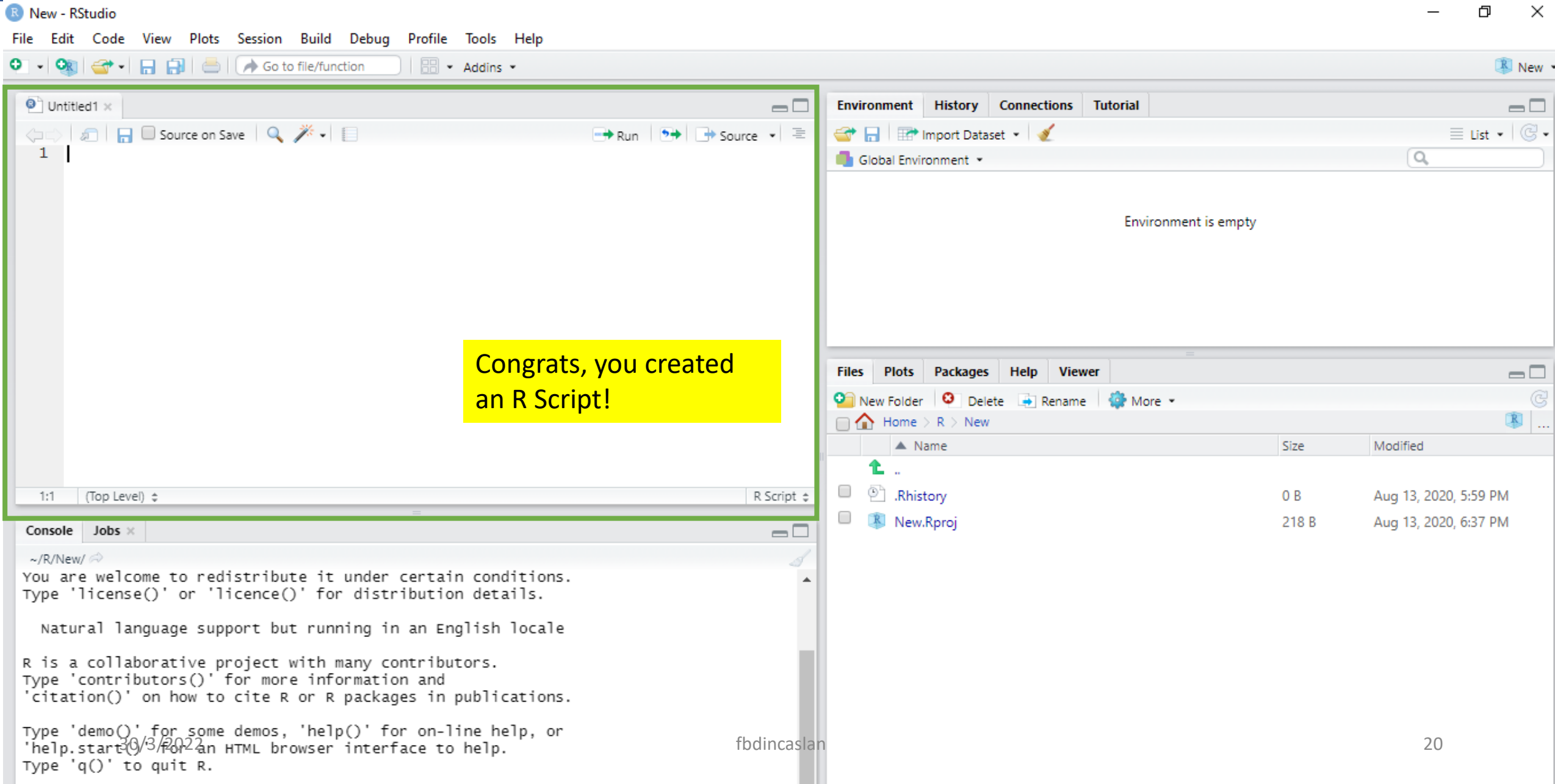
Files Window:

Name	Size	Modified
..		
.Rhistory	0 B	Aug 13, 2020, 5:59 PM
New.Rproj	218 B	Aug 13, 2020, 6:37 PM

GETTING USED to RSTUDIO



GETTING USED to RSTUDIO



The screenshot shows the RStudio IDE with a new R script file open. The console displays the following output:

```
~/R/New/  
You are welcome to redistribute it under certain conditions.  
Type 'license()' or 'licence()' for distribution details.  
  
Natural language support but running in an English locale  
  
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.
```

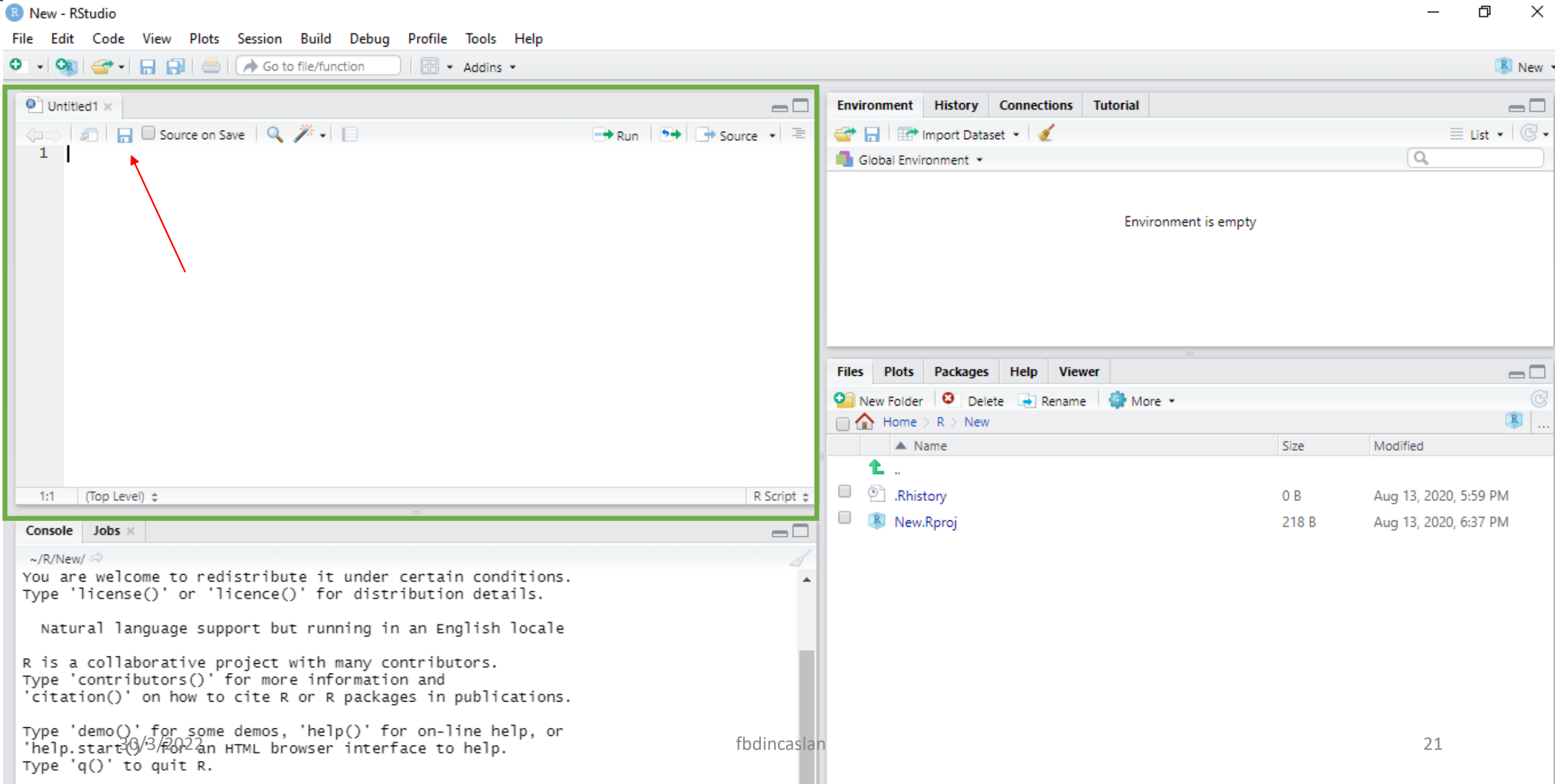
A yellow box highlights the text: "Congrats, you created an R Script!"

The Environment pane shows the Global Environment, which is empty.

The Files pane shows the following files:

Name	Size	Modified
..		
.Rhistory	0 B	Aug 13, 2020, 5:59 PM
New.Rproj	218 B	Aug 13, 2020, 6:37 PM

SAVE THE SCRIPT



The screenshot shows the RStudio interface with a new R script titled 'Untitled1'. A red arrow points to the 'Save' icon (floppy disk) in the toolbar. The console shows the R startup message.

Environment History Connections Tutorial

Global Environment

Environment is empty

Files Plots Packages Help Viewer

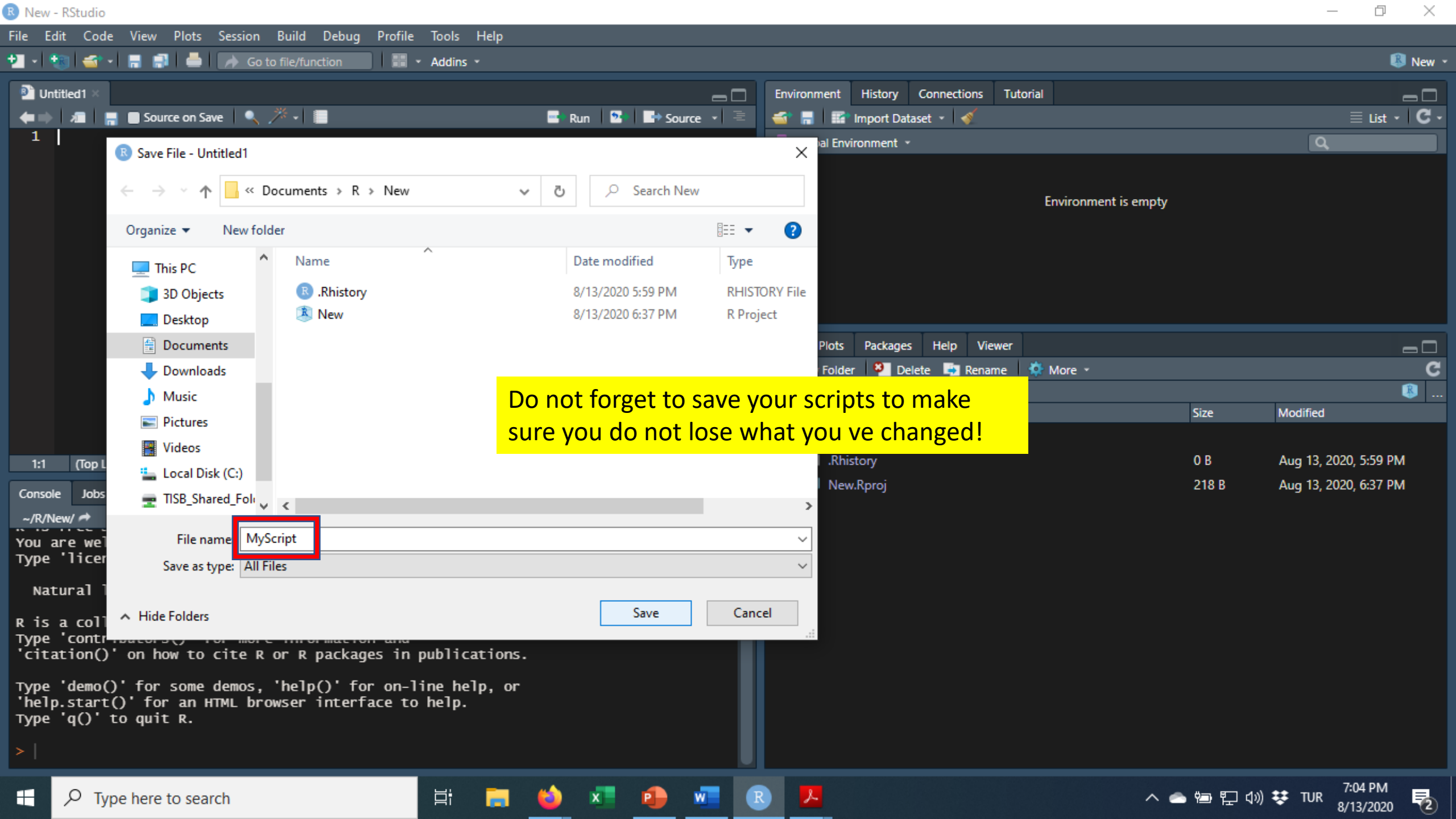
New Folder Delete Rename More

Home > R > New

	Name	Size	Modified
	..		
	.Rhistory	0 B	Aug 13, 2020, 5:59 PM
	New.Rproj	218 B	Aug 13, 2020, 6:37 PM

Console Jobs

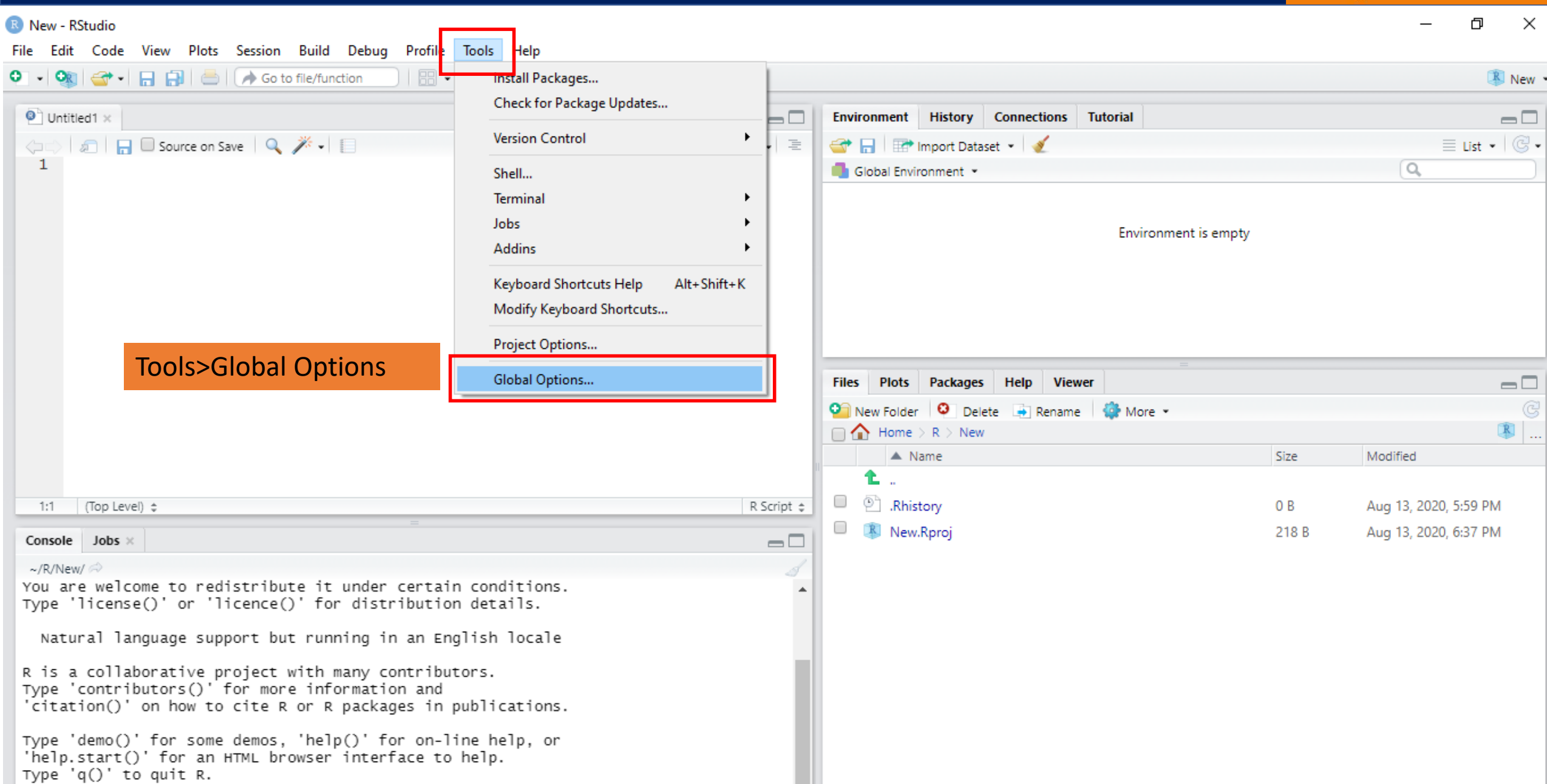
```
~/R/New/  
You are welcome to redistribute it under certain conditions.  
Type 'license()' or 'licence()' for distribution details.  
  
Natural language support but running in an English locale  
  
R is a collaborative project with many contributors.  
Type 'contributors()' for more information 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.
```



Do not forget to save your scripts to make sure you do not lose what you ve changed!

MyScript

HOW TO PERSONALIZE



The screenshot shows the RStudio interface with the 'Tools' menu open. The 'Global Options...' option is highlighted. An orange box with the text 'Tools>Global Options' points to this option. The console shows the R welcome message.

Tools>Global Options

Console Output:

```
~/R/New/
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

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.
```

Files Panel:

Name	Size	Modified
..		
.Rhistory	0 B	Aug 13, 2020, 5:59 PM
New.Rproj	218 B	Aug 13, 2020, 6:37 PM

HOW TO PERSONALIZE

New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Untitled1 x

Source on Save

Tools>Global Options>Appearance

You can change the color, theme, editor font, etc. according to your preference.

Options

General

Code

Appearance

Pane Layout

Packages

R Markdown

Sweave

Spelling

Git/SVN

Publishing

Terminal

Accessibility

RStudio theme: Classic

Zoom: 100%

Editor font: Lucida Console

Editor font size: 10

Editor theme: Katzenmilch Kr Theme Material Merbivore **Merbivore Soft** Mono Industrial Monokai Pastel On Dark Solarized Dark Solarized Light Textmate (default) Tomorrow Tomorrow Night Tomorrow Night 80s

Add... Remove

```
# plotting of R objects
plot <- function(x, y, ...)
{
  if (is.function(x) &&
      is.null(attr(x, "class")))
  {
    if (missing(y))
      y <- NULL

    # check for ylab argument
    hasylab <- function(...)
      !all(is.na(
        pmatch(names(list(...)),
                  "ylab")))

    if (hasylab(...))
      plot.function(x, y, ...)

    else
      plot.function(
        x, y,
        ylab = paste(
          deparse(substitute(x)),
            "(x)",
            ...)
      )
  }
  else
    UseMethod("plot")
}
```

Environment is empty

Size	Modified
0 B	Aug 13, 2020, 5:59 PM
218 B	Aug 13, 2020, 6:37 PM

OK Cancel Apply

~ / R / New /
You are welcome to redistribute it under certain conditions. See the file 'COPYING' for details.
Type 'license()' or 'licence()' for distribution details.
Natural language support but running in an English locale
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.

HOW TO PERSONALIZE

New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Untitled1

Source on Save Run Source

1

And magic happens!
Cool black background
😊

Environment History Connections Tutorial

Import Dataset

Global Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > R > New

	Name	Size	Modified
↑	..		
📄	.Rhistory	0 B	Aug 13, 2020, 5:59 PM
📁	New.Rproj	218 B	Aug 13, 2020, 6:37 PM

Console Jobs

~/R/New/

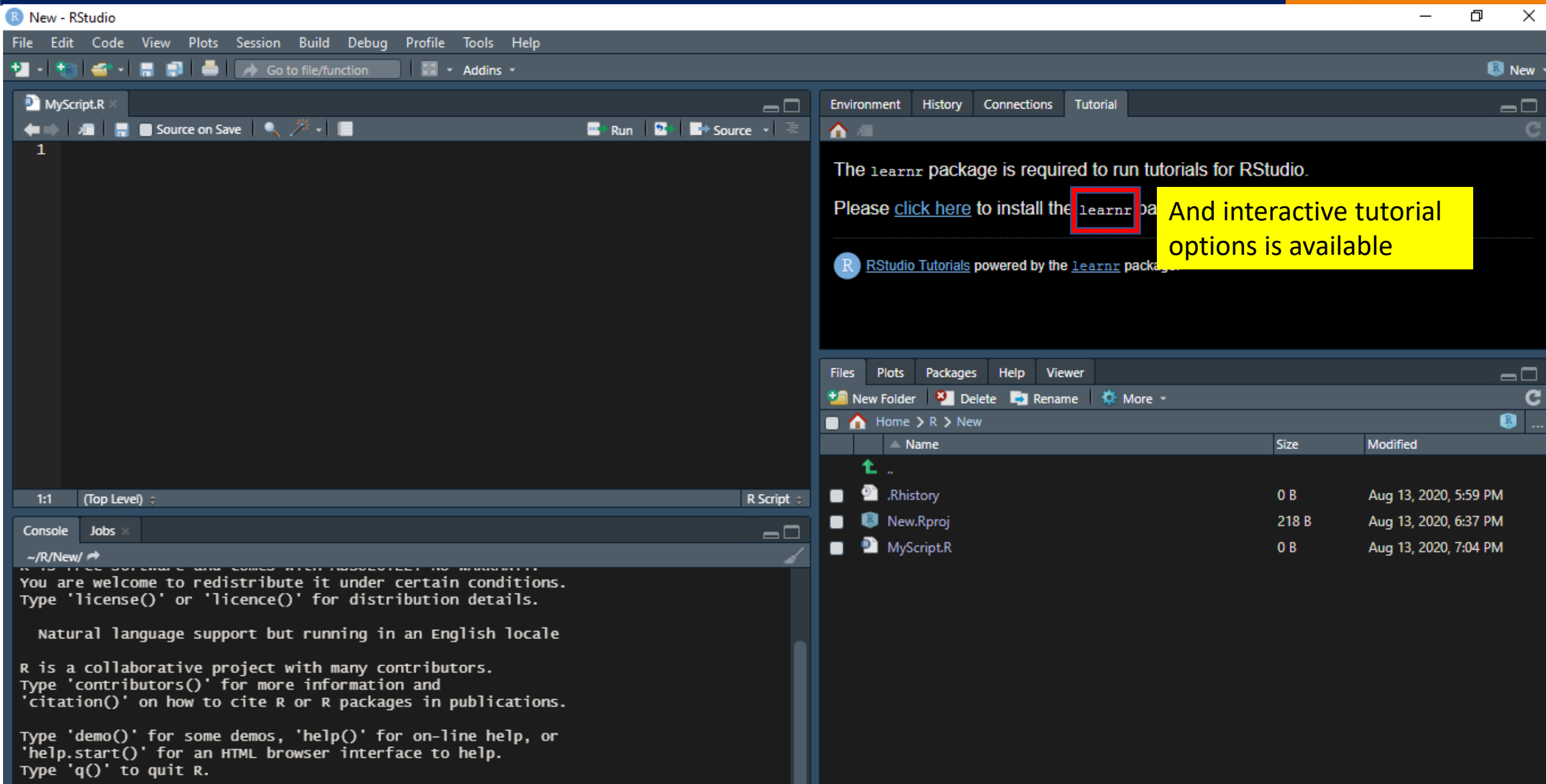
You are welcome to redistribute it under certain conditions.
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'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

PANE LAYOUT



The image shows the RStudio interface with the following panes:

- Source Editor:** Contains a file named `MyScript.R` with a single line of code: `1`.
- Environment:** Displays a message: "The `learnr` package is required to run tutorials for RStudio. Please [click here](#) to install the `learnr` package." The word `learnr` is highlighted with a red box. A yellow callout box points to this message with the text: "And interactive tutorial options is available".
- Files:** Shows the file explorer for the `~/R/New/` directory. It lists the following files:

Name	Size	Modified
..		
.Rhistory	0 B	Aug 13, 2020, 5:59 PM
New.Rproj	218 B	Aug 13, 2020, 6:37 PM
MyScript.R	0 B	Aug 13, 2020, 7:04 PM

Console: Displays the R startup message:

```
You are welcome to redistribute it under certain conditions.  
Type 'license()' or 'licence()' for distribution details.  
  
Natural language support but running in an English locale  
  
R is a collaborative project with many contributors.  
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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.
```

PANE LAYOUT

New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Untitled1 x

Source on Save

1

Tools>Global Options>Page Layout

You can choose which panes to show which panes to not show.

Options

Choose the layout of the panes in RStudio by selecting from the controls in each quadrant.

Source

Environment, History, Connections

Environment
History
Files
Plots
Connections
Packages
Help
Build
VCS
Tutorial
Viewer

Console

Files, Plots, Packages, Help, Viewer

Environment
History
Files
Plots
Connections
Packages
Help
Build
VCS
Tutorial
Viewer

OK Cancel Apply

Environment is empty

More

	Size	Modified
	0 B	Aug 13, 2020, 5:59 PM
	218 B	Aug 13, 2020, 6:37 PM

~/R/New/

You are welcome to redistribute it under certain conditions. See the file LICENSE for more details.

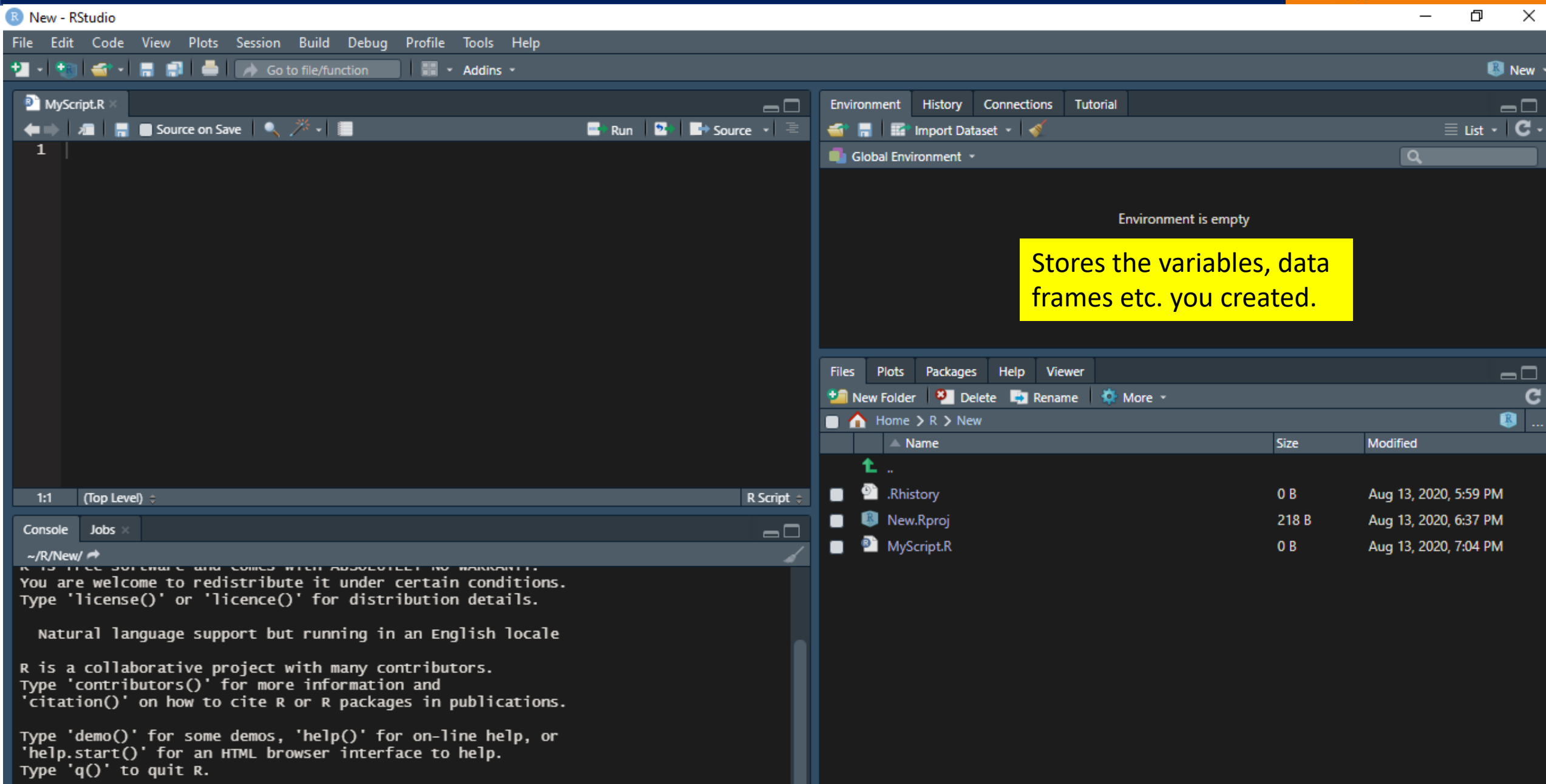
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Natural language support but running in an English locale.

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

PANE LAYOUT



The screenshot shows the RStudio IDE interface with four main panes:

- Source Editor (Top Left):** Displays a script named 'MyScript.R' with a line number '1' and a cursor. The toolbar includes 'Source on Save', 'Run', and 'Source' buttons.
- Environment Pane (Top Right):** Shows the 'Global Environment' with the message 'Environment is empty'. A yellow text box is overlaid on this pane with the text: 'Stores the variables, data frames etc. you created.'
- Files Pane (Bottom Right):** Displays a file explorer view of the 'R' directory. It shows a list of files and folders with columns for 'Name', 'Size', and 'Modified'.
- Console (Bottom Left):** Shows the R command prompt output, including the R license text and instructions on how to use the software.

Files Pane Details:

Name	Size	Modified
..		
.Rhistory	0 B	Aug 13, 2020, 5:59 PM
New.Rproj	218 B	Aug 13, 2020, 6:37 PM
MyScript.R	0 B	Aug 13, 2020, 7:04 PM

Console Output:

```
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Natural language support but running in an English locale  
  
R is a collaborative project with many contributors.  
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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.
```

PANE LAYOUT

New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

MyScript.R

Source on Save Run Source

1

Environment History Connections Tutorial

To Console To Source

Keeps the code history.

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > R > New

	Name	Size	Modified
	..		
	.Rhistory	0 B	Aug 13, 2020, 5:59 PM
	New.Rproj	218 B	Aug 13, 2020, 6:37 PM
	MyScript.R	0 B	Aug 13, 2020, 7:04 PM

Console Jobs

~/R/New/

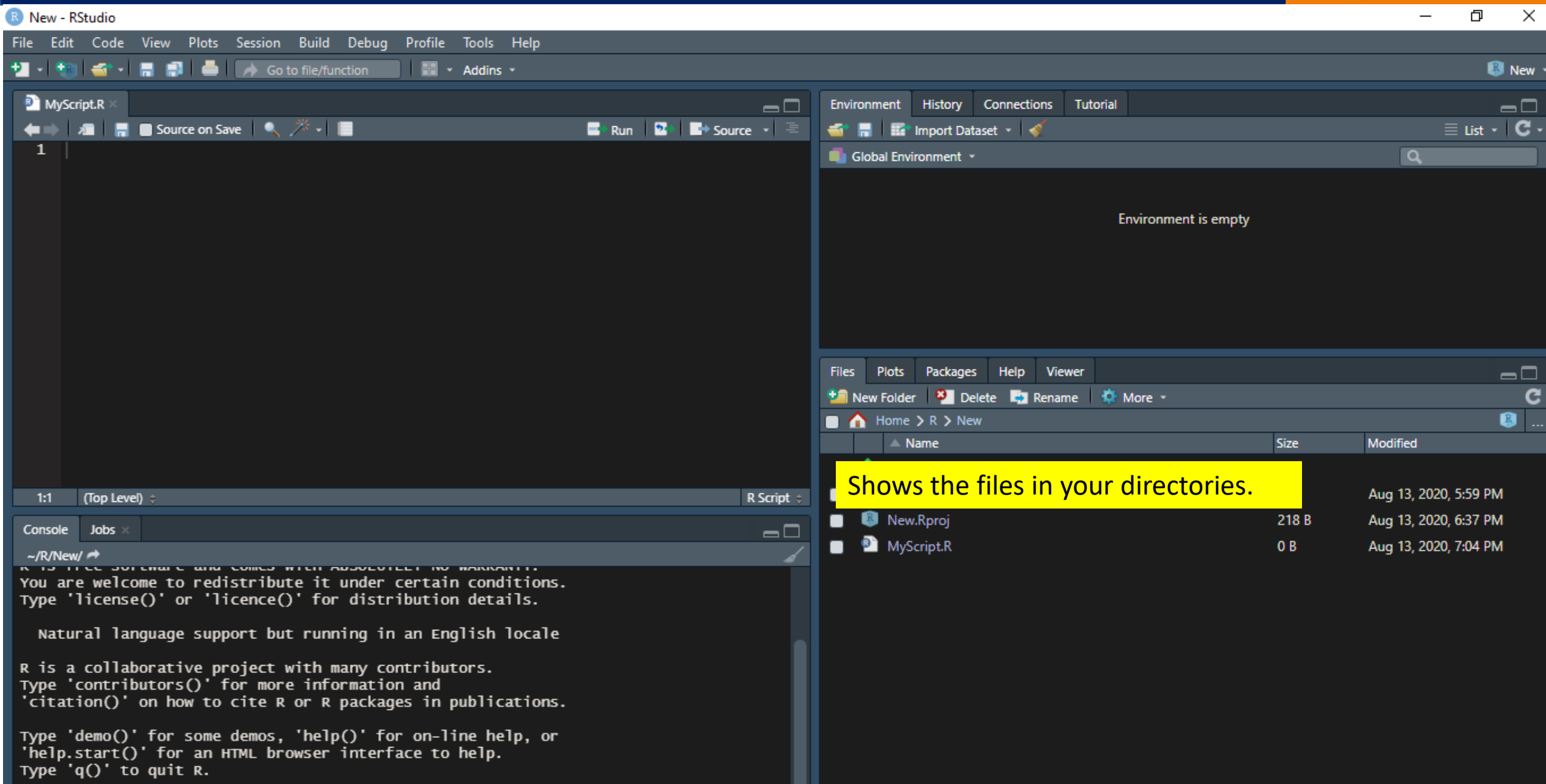
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You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

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.

PANE LAYOUT



The image displays the RStudio application window with the following panes:

- Source Pane:** Shows the script file "MyScript.R" with line 1 selected. The toolbar includes "Run" and "Source" buttons.
- Environment Pane:** Displays the "Global Environment" which is currently empty.
- Files Pane:** Shows the file explorer for the directory "Home > R > New". It lists the following files:

Name	Size	Modified
New.Rproj	218 B	Aug 13, 2020, 6:37 PM
MyScript.R	0 B	Aug 13, 2020, 7:04 PM

The "Files" pane is highlighted with a yellow box and the text "Shows the files in your directories."

- Console Pane:** Displays the R startup message, including the license information and the prompt "Type 'license()' or 'licence()' for distribution details."

PANE LAYOUT

R New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

MyScript.R

Source on Save Run Source

1

Environment History Connections Tutorial

Import Dataset

Global Environment

Environment is empty

Files Plots Packages Help Viewer

Zoom Export

Shows the plots you run.

1:1 (Top Level) R Script

Console Jobs

~/R/New/

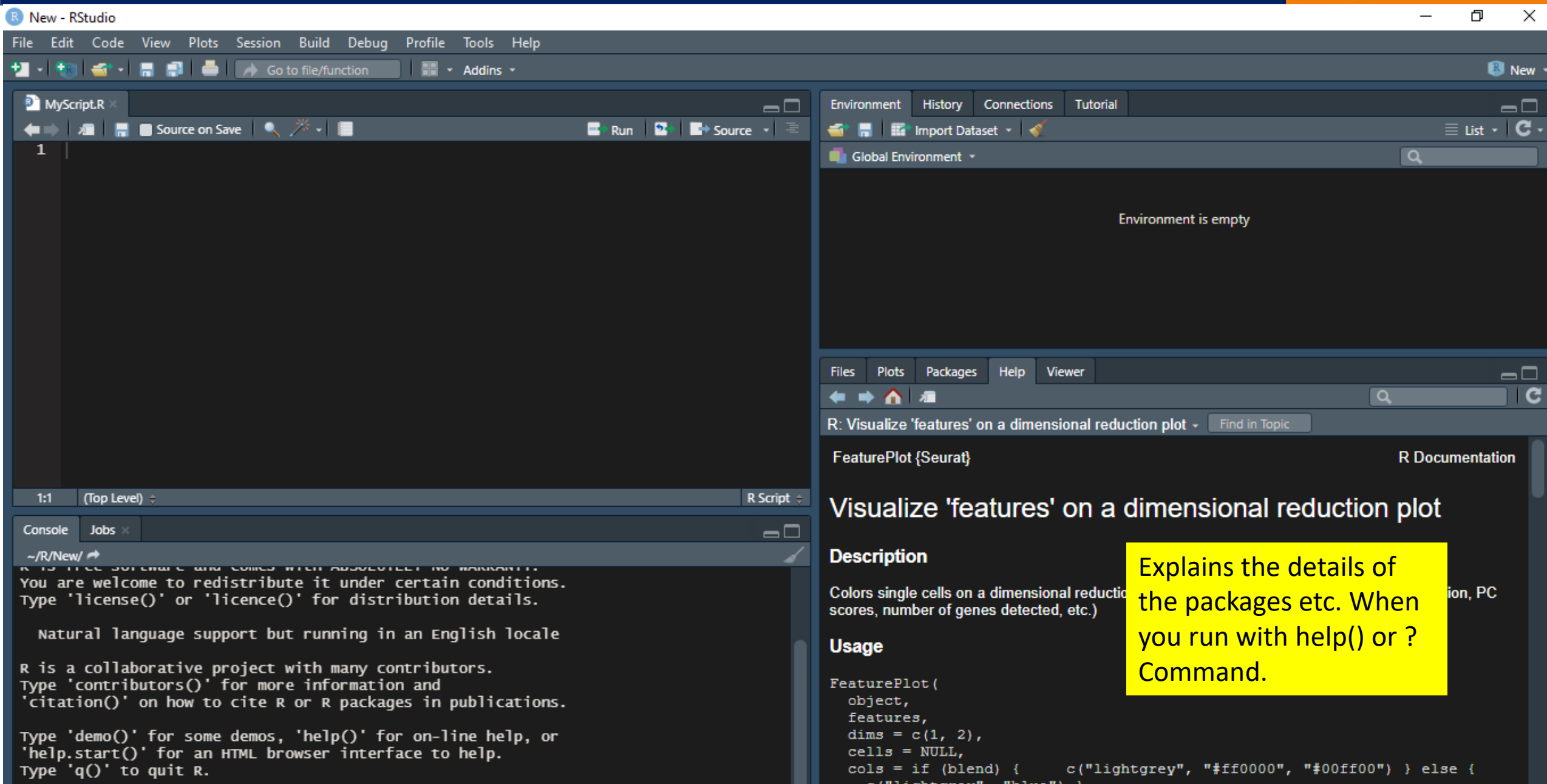
R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

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.

PANE LAYOUT



The screenshot displays the RStudio application window with the following components:

- Top Menu Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Toolbar:** Includes icons for file operations, running code, and source editing.
- Source Editor:** Displays a script named 'MyScript.R' with line numbers. The first line is '1'.
- Environment Panel:** Shows the 'Global Environment' with the message 'Environment is empty'.
- Plots Panel:** Contains a search bar and a 'Find in Topic' button.
- Help Panel:** Displays the 'FeaturePlot {Seurat}' documentation page, titled 'Visualize 'features' on a dimensional reduction plot'.
- Console:** Shows the R startup message, including the license and instructions on how to use R.

FeaturePlot {Seurat} R Documentation

Visualize 'features' on a dimensional reduction plot

Description

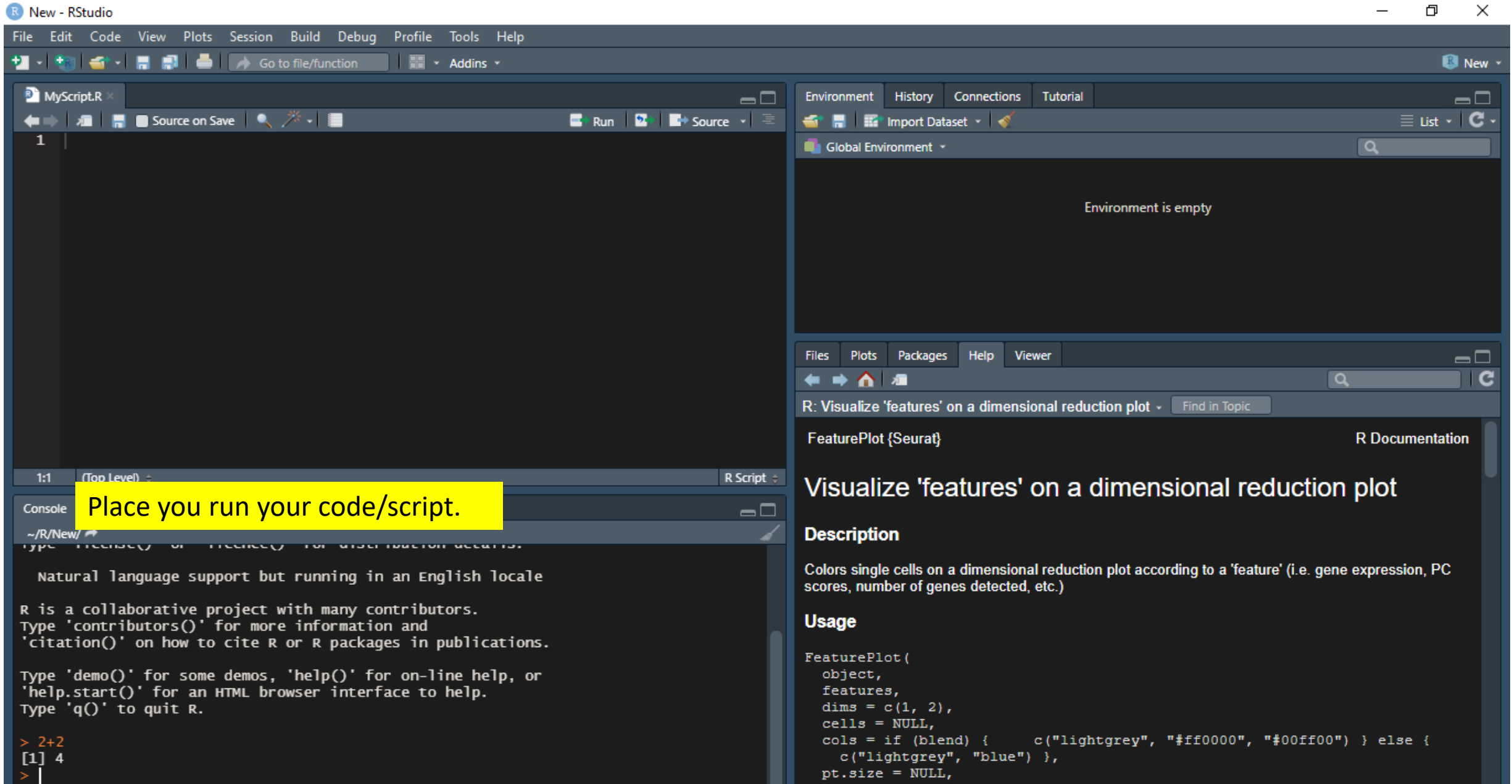
Colors single cells on a dimensional reduction plot by the values of a feature (e.g., gene expression scores, number of genes detected, etc.)

Usage

```
FeaturePlot(  
  object,  
  features,  
  dims = c(1, 2),  
  cells = NULL,  
  cols = if (blend) { c("lightgrey", "#ff0000", "#00ff00") } else {  
    c("lightgrey", "blue")  
  }  
)
```

Explains the details of the packages etc. When you run with help() or ? Command.

PANE LAYOUT



New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

MyScript.R

Source on Save Run Source

1

Environment History Connections Tutorial

Import Dataset List

Global Environment

Environment is empty

Files Plots Packages Help Viewer

R: Visualize 'features' on a dimensional reduction plot Find in Topic

FeaturePlot {Seurat} R Documentation

Visualize 'features' on a dimensional reduction plot

Description

Colors single cells on a dimensional reduction plot according to a 'feature' (i.e. gene expression, PC scores, number of genes detected, etc.)

Usage

```
FeaturePlot(  
  object,  
  features,  
  dims = c(1, 2),  
  cells = NULL,  
  cols = if (blend) { c("lightgrey", "#ff0000", "#00ff00") } else {  
    c("lightgrey", "blue") },  
  pt.size = NULL,
```

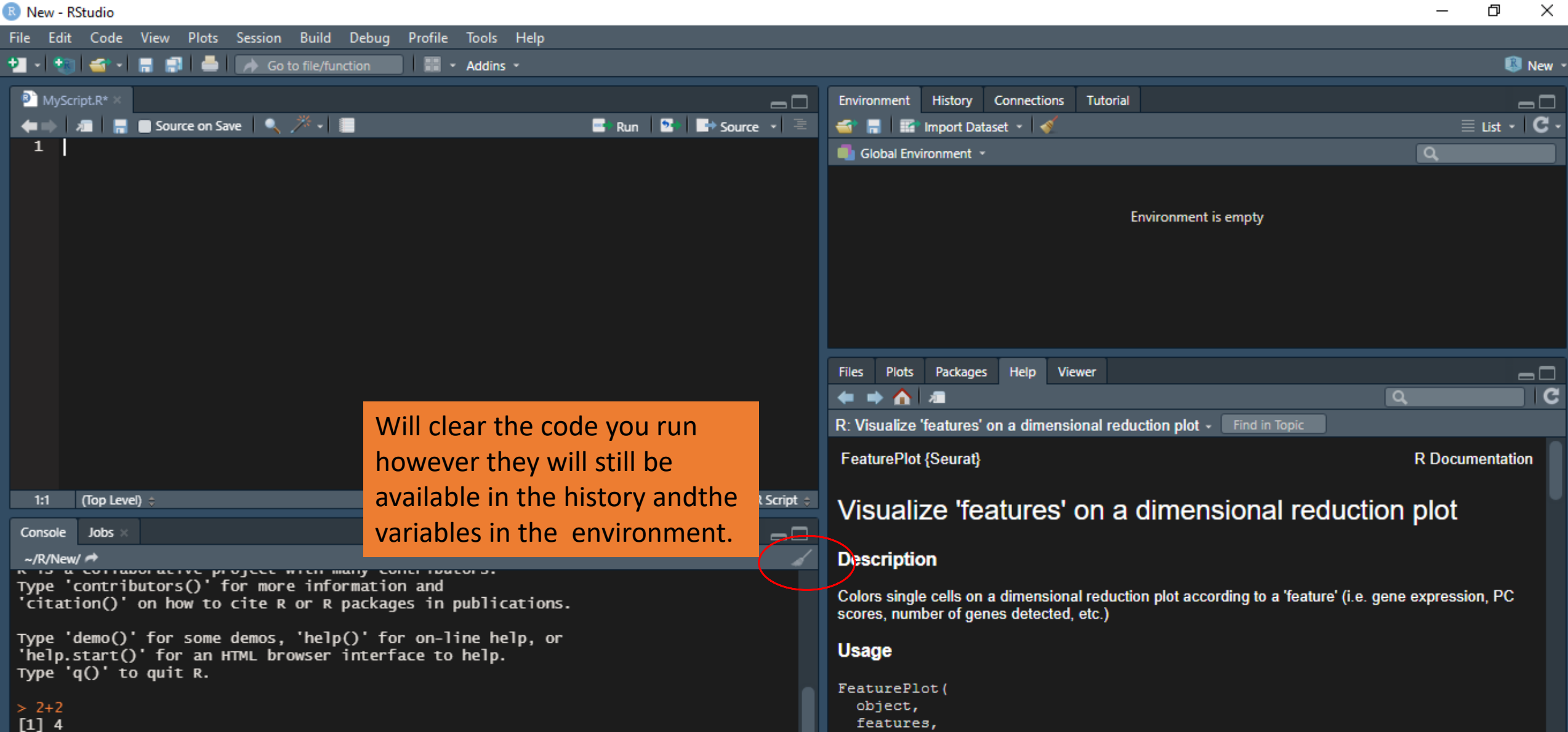
Console

Place you run your code/script.

~/R/New/

```
type 'license()' or 'licence()' for distribution details.  
  
Natural language support but running in an English locale  
  
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+2  
[1] 4  
>
```

CLEAR CONSOLE (Ctrl-L)



The screenshot shows the RStudio interface with the following components:

- Source Editor:** Contains a single line of code: `1 |`.
- Environment Pane:** Shows "Global Environment" and "Environment is empty".
- Console:** Displays the R startup message and a calculation:

```
> 2+2  
[1] 4
```
- Viewer Pane:** Shows the R documentation for `FeaturePlot (Seurat)`, titled "Visualize 'features' on a dimensional reduction plot".

An orange text box is overlaid on the console area with the text: "Will clear the code you run however they will still be available in the history and the variables in the environment."

A red circle highlights the "Clear Console" icon (a broom) in the bottom right corner of the Source Editor pane.

RUNNING A SCRIPT (Ctrl+Enter)

New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

MyScript.R*

Source on Save Run Source

```
1 #This symbol is for comments, so this area will not be run like a code. Example: 2+2
2
3 #addition
4 a<-2+2
5
6 a
7
8 #divison
9 b<-45/5
10
11 b
12
```

1:1 (Top Level) R Script

Console Jobs

```
~/R/New/
> #This symbol is for comments, so this area will not be run like a code. Example: 2+2
>
> #addition
> a<-2+2
>
> a
[1] 4
>
> #divison
> b<-45/5
>
> b
[1] 9
>
```

Environment History Connections Tutorial

Import Dataset

Global Environment

values

a	4
b	9

Files Plots Packages Help Viewer

R: Visualize 'features' on a dimensional reduction plot Find in Topic

FeaturePlot {Seurat} R Documentation

Visualize 'features' on a dimensional reduction plot

Description

Colors single cells on a dimensional reduction plot according to a 'feature' (i.e. gene expression, PC scores, number of genes detected, etc.)

Usage

CLEAR ENVIRONMENT

R New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

MyScript.R*

```
1 #This symbol is for comments, so this area will not be run like a code. Examp
2
3 #addition
4 a<-2+2
5
6 a
7
8 #divison
9 b<-45/5
10
11 b
12
```

Source on Save Run Source

Environment History Connections Tutorial

Import Dataset

Global Environment

Clear objects from the workspace

Environment is empty

Deletes the variables etc. You have in the environment. Be careful while using it!

Files Plots Packages Help Viewer

R: Visualize 'features' on a dimensional reduction plot Find in Topic

FeaturePlot {Seurat} R Documentation

Visualize 'features' on a dimensional reduction plot

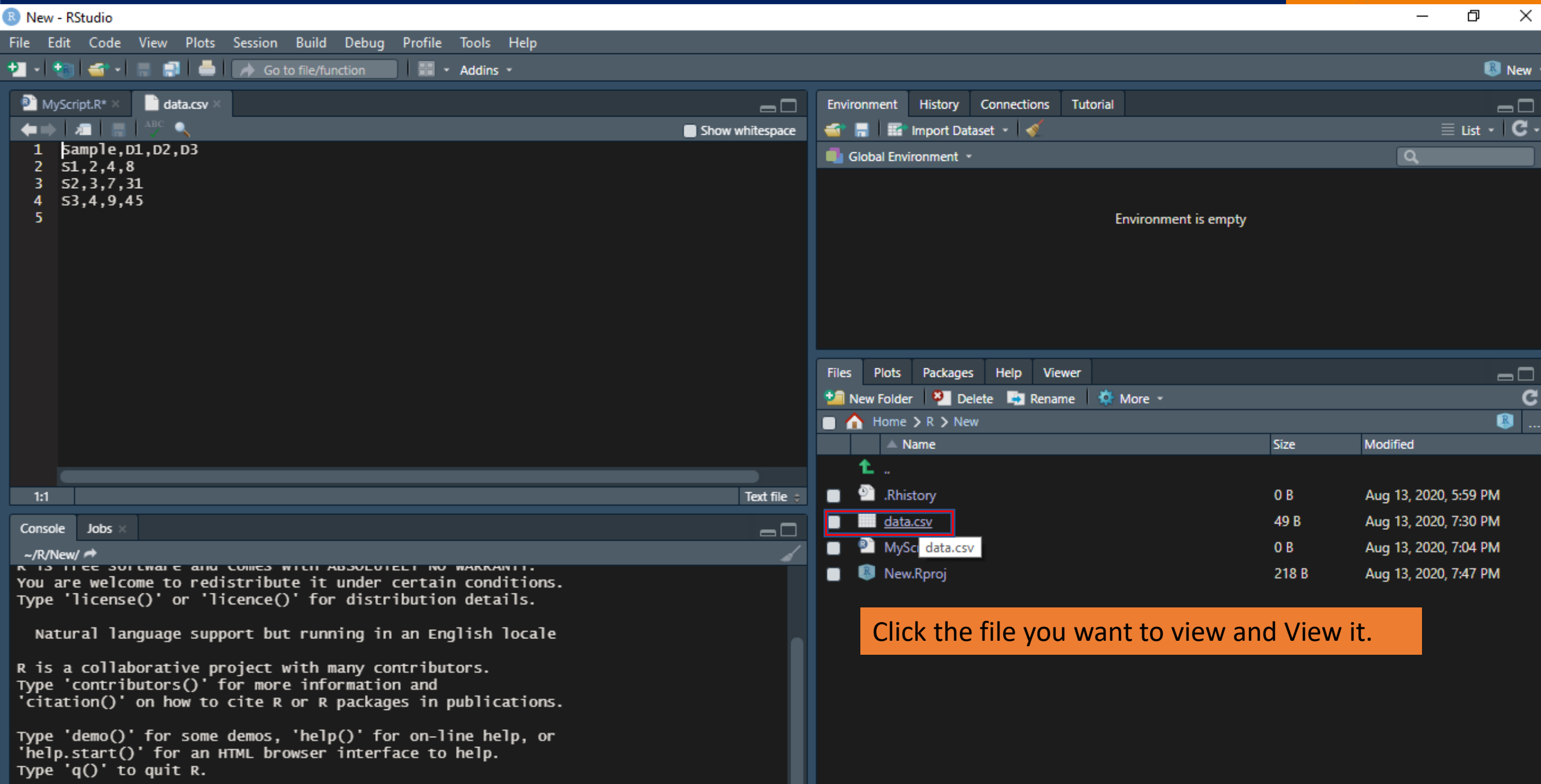
Description

Colors single cells on a dimensional reduction plot according to a 'feature' (i.e. gene expression, PC scores, number of genes detected, etc.)

Usage

```
FeaturePlot(
  object,
  features,
```

VIEWING A FILE



The screenshot shows the RStudio interface with the following components:

- Top Menu Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Toolbar:** Includes icons for file operations and a "Go to file/function" search bar.
- Source Editor:** Displays the content of `data.csv` with the following text:

```
1 sample,D1,D2,D3
2 S1,2,4,8
3 S2,3,7,31
4 S3,4,9,45
5
```
- Environment Panel:** Shows "Global Environment" and "Environment is empty".
- Files Panel:** Displays a file explorer view of the `~/R/New/` directory. The file `data.csv` is highlighted with a red box.
- Console:** Shows the R startup message and instructions for using the software.

Console Output:

```
~ /R/New/ ↗
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.

Natural language support but running in an English locale

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.
```

Files Panel:

Name	Size	Modified
..		
.Rhistory	0 B	Aug 13, 2020, 5:59 PM
data.csv	49 B	Aug 13, 2020, 7:30 PM
MyScript.R	0 B	Aug 13, 2020, 7:04 PM
New.Rproj	218 B	Aug 13, 2020, 7:47 PM

Click the file you want to view and View it.

IMPORT A FILE

New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

MyScript.R* data.csv

Show whitespace

```
1 sample,D1,D2,D3
2 S1,2,4,8
3 S2,3,7,31
4 S3,4,9,45
5
```

Environment History Connections Tutorial

Import Dataset

Global Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > R > New

	Name	Size	Modified
	..		
	.Rhistory	0 B	Aug 13, 2020, 5:59 PM
	data.csv	49 B	Aug 13, 2020, 7:30 PM
		0 B	Aug 13, 2020, 7:04 PM
		218 B	Aug 13, 2020, 7:47 PM

View File Import Dataset...

Console Jobs

~/R/New/

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.

Natural language support but running in an English locale

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.

Right click and chose import a file.

IMPORT A FILE

New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

MyScript.R* data.csv

Environment History Connections Tutorial

Import Text Data

File/URL:
~/R/New/data.csv Update

Data Preview:

Sample (character)	D1 (double)	D2 (double)	D3 (double)
S1	2	4	8
S2	3	7	31
S3	4	9	45

Previewing first 50 entries.

Import Options:

Name: data Skip: 0

☒ First Row as Names ☒ Trim Spaces ☒ Open Data Viewer

Delimiter: Comma Quotes: Default Locale: Configure...

Escape: None Comment: Default NA: Default

Code Preview:

```
library(readr)
data <- read_csv("data.csv")
view(data)
```

Import Cancel

? Reading rectangular data using readr

IMPORT A FILE

RStudio interface showing the import of a CSV file. The top-left pane displays the 'data' table with 3 entries and 4 columns. The bottom-left pane shows the R console with the script used to read the CSV file. The right-hand side shows the Environment pane with the 'data' object and the Files pane showing the project directory.

	Sample	D1	D2	D3
1	S1	2	4	8
2	S2	3	7	31
3	S3	4	9	45

```
~/R/New/ ↗  
D2 = col_double(),  
D3 = col_double()  
)  
> view(data)  
> library(readr)  
> data <- read_csv("data.csv")  
Parsed with column specification:  
cols(  
  sample = col_character(),  
  D1 = col_double(),  
  D2 = col_double(),  
  D3 = col_double()  
)  
> view(data)
```

Environment: Global Environment
Data: data (3 obs. of 4 variables)

Files: Home > R > New

Name	Size	Modified
..		
.Rhistory	0 B	Aug 13, 2020, 5:59 PM
data.csv	49 B	Aug 13, 2020, 7:30 PM
MyScript.R	0 B	Aug 13, 2020, 7:04 PM
	218 B	Aug 13, 2020, 7:47 PM

Or type

mydata <- read.csv('data.csv', header=TRUE)

And to view the data

View(mydata)

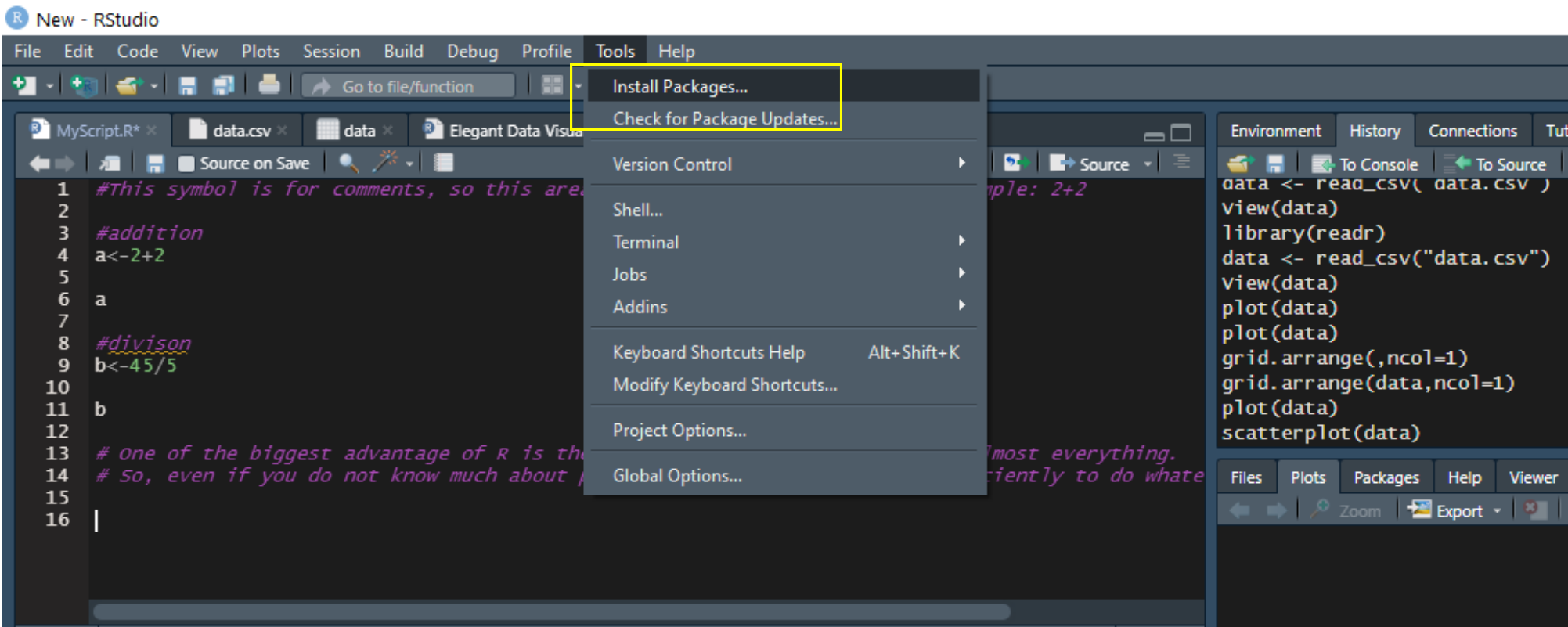
in the console

(or write as a script and run the relevant part of the script)

One of the biggest advantages of R is there is a package or function for almost everything.

So, even if you do not know much about programming, you can use them efficiently to do whatever you want to do.

Tools>Install.packages>car



There are two main platforms to download packages:

- **CRAN** (which is already available when you download R/Rstudio)
- **Bioconductor** (google the name of the package and find how to download)

```
> install.packages("car")  
Installing package into 'C:/Users/USER/Documents/R/win-library/3.6'  
(as 'lib' is unspecified)  
trying URL 'https://cran.rstudio.com/bin/windows/contrib/3.6/car_3.0-9.zip'  
Content type 'application/zip' length 1565089 bytes (1.5 MB)  
downloaded 1.5 MB  
  
package 'car' successfully unpacked and MD5 sums checked  
  
The downloaded binary packages are in  
C:\Users\USER\AppData\Local\Temp\RtmpINIKyG\downloaded_packages  
> |
```

'>' means the download the completed

```
> install.packages("car")
Installing package into 'C:/Users/USER/Documents/R/win-library/3.6'
(as 'lib' is unspecified)
trying URL 'https://cran.rstudio.com/bin/windows/contrib/3.6/car_3.0-9.zip'
Content type 'application/zip' length 1565089 bytes (1.5 MB)
downloaded 1.5 MB

package 'car' successfully unpacked and MD5 sums checked

The downloaded binary packages are in
C:\Users\USER\AppData\Local\Temp\RtmpINIKyG\downloaded_packages
>
```

'>' means the download the completed

LOADING THE PACKAGE

New - RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

MyScript.R* data.csv data Elegant Data Visualization using R ggpl...

Source on Save Run Source

```
1 # This symbol is for comments, so this area will not be run like a code. Example: 2+2
2
3 #addition
4 a<-2+2
5
6 a
7
8 #divison
9 b<-45/5
10
11 b
12
13 # One of the biggest advantage of R is there is a package or function for almost everything.
14 # So, even if you do not know much about programming, you can use them efficiently to do wha
15
16 install.packages("car")
17 library(car)
18
```

18:1 (Top Level) R Script

Console ~/R/New/

```
Error in install.packages : updating loaded packages

Restarting R session...

> install.packages("car")
Installing package into 'C:/Users/USER/Documents/R/win-library/3.6'
(as 'lib' is unspecified)
trying URL 'https://cran.rstudio.com/bin/windows/contrib/3.6/car_3.0-9.zip'
Content type 'application/zip' length 1565089 bytes (1.5 MB)
downloaded 1.5 MB

package 'car' successfully unpacked and MD5 sums checked

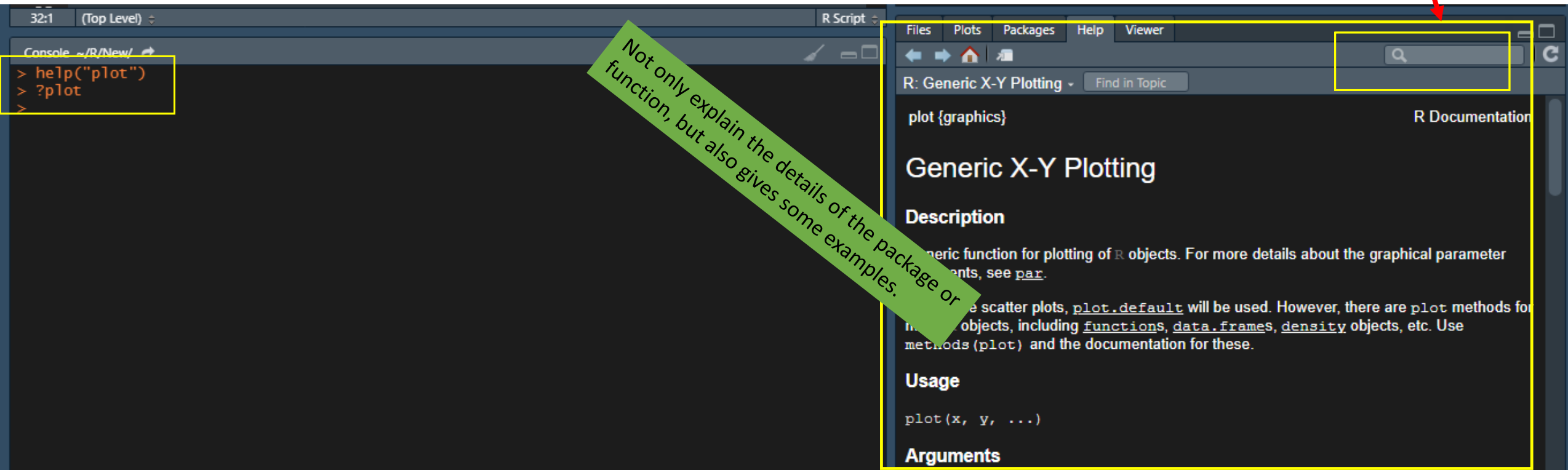
The downloaded binary packages are in
C:\Users\USER\AppData\Local\Temp\RtmpGIZac1\downloaded_packages

> library(car)
Loading required package: carData
>
```

If you are not sure how to use the package (i.e. the parameters you can change, etc.), you can call for a help:

help(«name of the function»)
?nameofthefunction


Or you can simply type of the function under the Help tab search button to see the relevant R documentation of that function!!!



The screenshot shows the RStudio interface. On the left, the Console window displays the commands `> help("plot")` and `> ?plot`. On the right, the Help pane shows the documentation for the `plot` function, titled "Generic X-Y Plotting". The documentation includes sections for "Description", "Usage", and "Arguments". A green diagonal banner is overlaid on the Help pane with the text: "Not only explain the details of the package or function, but also gives some examples." A red arrow points from the text box in the top right to the search bar in the Help pane.

Not only explain the details of the package or function, but also gives some examples.

~ 2000 packages
ready to download
for various analysis



[Home](#)
[Install](#)
[Help](#)
[Developers](#)
[About](#)

[Home](#) » [BiocViews](#)

All Packages

Bioconductor version 3.11 (Release)

Autocomplete biocViews search:

Packages found under Software:

Rank based on number of downloads: lower numbers are more frequently downloaded.

Show All entries

Search table:

Package	Maintainer	Title	Rank
BiocVersion	Bioconductor Package Maintainer	Set the appropriate version of Bioconductor packages	1
BiocGenerics	Bioconductor Package Maintainer	S4 generic functions used in Bioconductor	2
S4Vectors	Bioconductor Package Maintainer	Foundation of vector-like and list-like containers in Bioconductor	3
IRanges	Bioconductor Package Maintainer	Foundation of integer range manipulation in Bioconductor	4
Biobase	Bioconductor Package Maintainer	Biobase: Base functions for Bioconductor	5
zlibbioc	Bioconductor Package Maintainer	An R packaged zlib-1.2.5	6

▼ Software (1905)

- ▶ AssayDomain (766)
- ▶ BiologicalQuestion (793)
- ▶ Infrastructure (426)
- ▶ ResearchField (853)
- ▶ StatisticalMethod (689)
- ▶ Technology (1205)
- ▶ WorkflowStep (1034)
- ▶ AnnotationData (962)
- ▶ ExperimentData (392)
- ▶ Workflow (27)

https://www.bioconductor.org/packages/release/BiocViews.html#_Software

EXAMPLE DATA

```
R - RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
MyScript.R* data.csv data
Source on Save Run Source
1
2
3 #addition
4 a<-2+2
5
6 a
7
8 #divison
9 b<-45/5
10
11 b
12
13 # One of the biggest advantage of R is there is a package or function for almost every
14 # So, even if you do not know much about programming, you can use them efficiently to
15
16 install.packages("car")
17 library(car)
18 mtcars
19
18:7 (Top Level) R Script
```

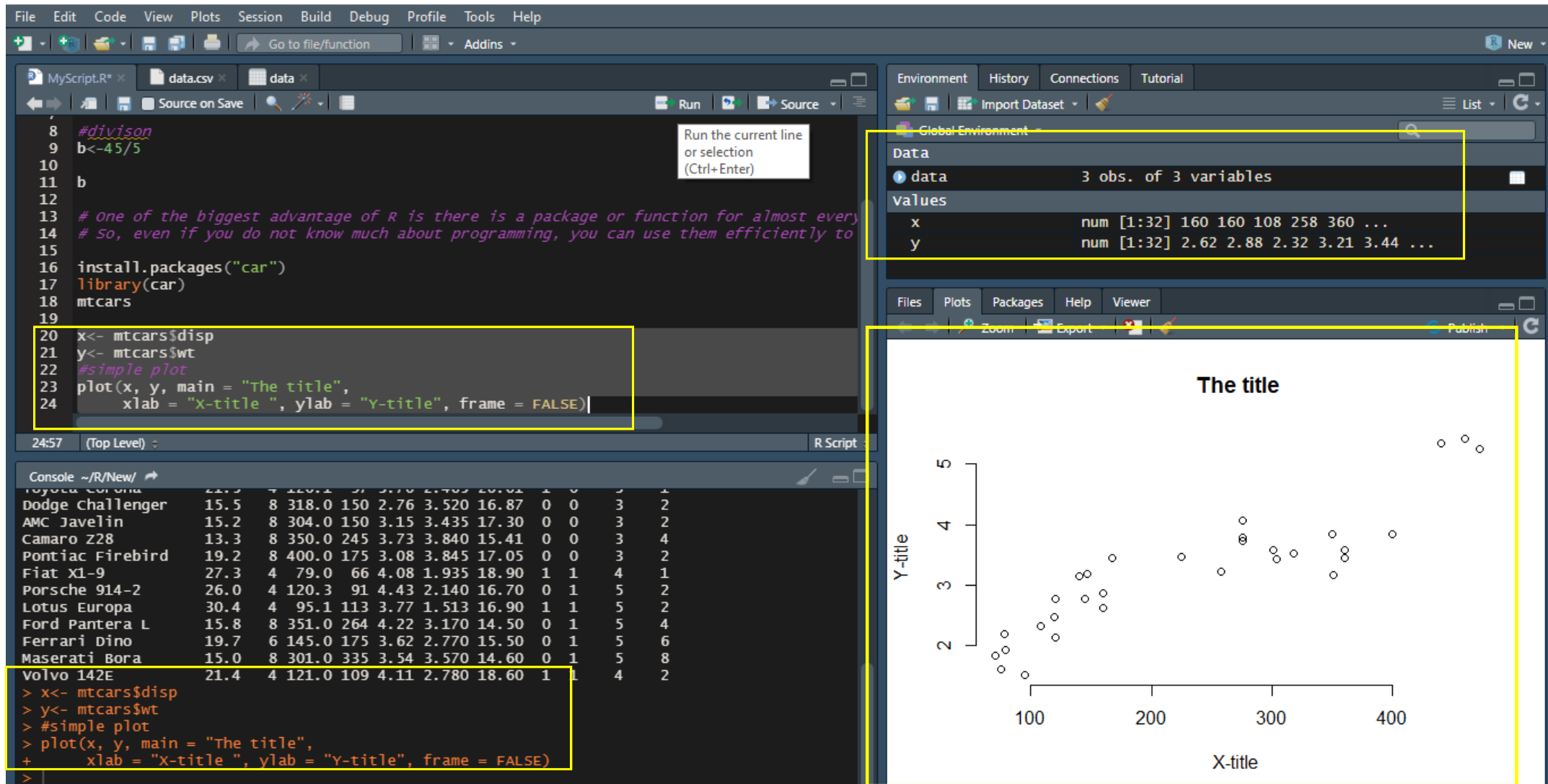
```
Console ~/R/New/
> mtcars
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160.0	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160.0	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108.0	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258.0	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360.0	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225.0	105	2.76	3.460	20.22	1	0	3	1
Duster 360	14.3	8	360.0	245	3.21	3.570	15.84	0	0	3	4
Merc 240D	24.4	4	146.7	62	3.69	3.190	20.00	1	0	4	2
Merc 230	22.8	4	140.8	95	3.92	3.150	22.90	1	0	4	2
Merc 280	19.2	6	167.6	123	3.92	3.440	18.30	1	0	4	4
Merc 280C	17.8	6	167.6	123	3.92	3.440	18.90	1	0	4	4
Merc 450SE	16.4	8	275.8	180	3.07	4.070	17.40	0	0	3	3
Merc 450SL	17.3	8	275.8	180	3.07	3.730	17.60	0	0	3	3
Merc 450SLC	15.2	8	275.8	180	3.07	3.780	18.00	0	0	3	3
Cadillac Fleetwood	10.4	8	472.0	205	2.93	5.250	17.98	0	0	3	4

Lets load the mtcars data in the car library.

Always check the data by calling it (simply put the name of the data and run it in the console such as mtcars or the data you imported before).

EXAMPLE DATA



If your working directory is different that the files you are keeping, you either need to call these files by calling the directories specifically or you simply change your working directory to the folder that you want to keep your analysis.

To know which working directory you are working right now, type:
getwd()

```
26  
27 #working directory  
28 getwd()  
28:1 (Top Level) R Script  
Console ~/R/New/  
> getwd()  
[1] "C:/Users/USER/Documents/R/New"  
> |
```

To change your working directory, please use:

setwd()

```
26  
27 #working directory  
28 getwd()  
29 setwd("C:/Users/USER/Documents")  
30  
31 getwd()  
32 |
```

32:1 (Top Level) R Script

Console ~/

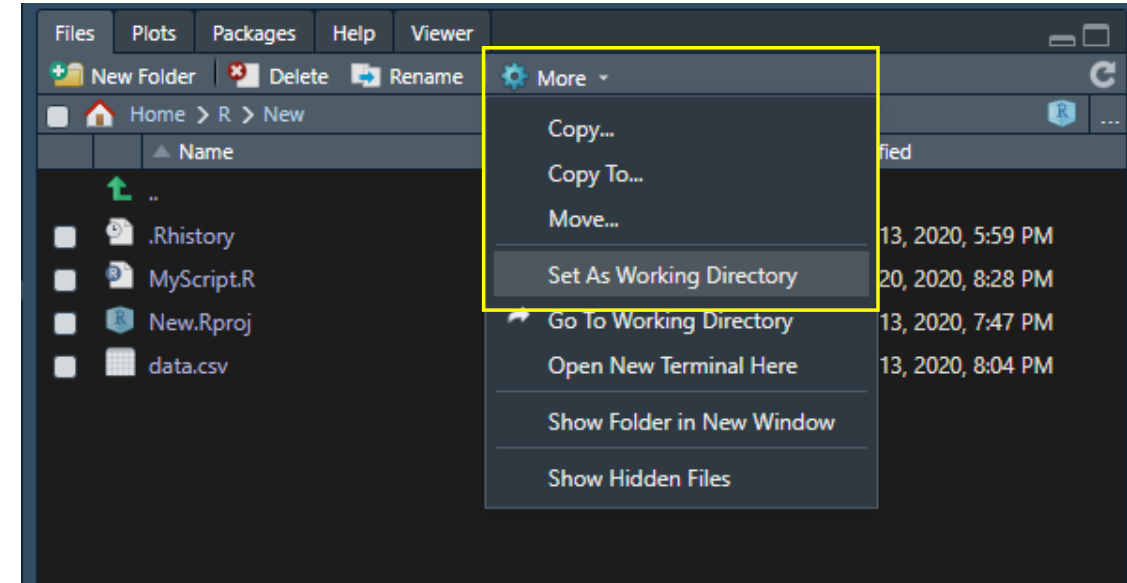
```
> setwd("C:/Users/USER/Documents")  
> getwd()  
[1] "C:/Users/USER/Documents"  
> |
```

Can you spot the difference between the previous wd and this wd?

WORKING DIRECTORY – setwd()

You can do it manually as well.
(Go to the location you want to set via Files)

Files>More>Set as a working directory



```
25  
26  
27 #working directory  
28 getwd()  
29 setwd("C:/Users/USER/Documents")  
30  
31 getwd()  
32
```

```
32:1 (Top Level) R Script  
  
Console ~/R/New/  
> setwd("C:/Users/USER/Documents")  
> getwd()  
[1] "C:/Users/USER/Documents"  
> setwd("~/R/New")  
> getwd()  
[1] "C:/Users/USER/Documents/R/New"  
>
```

