Hello World with R using RStudio

Estimated time needed: 15 minutes

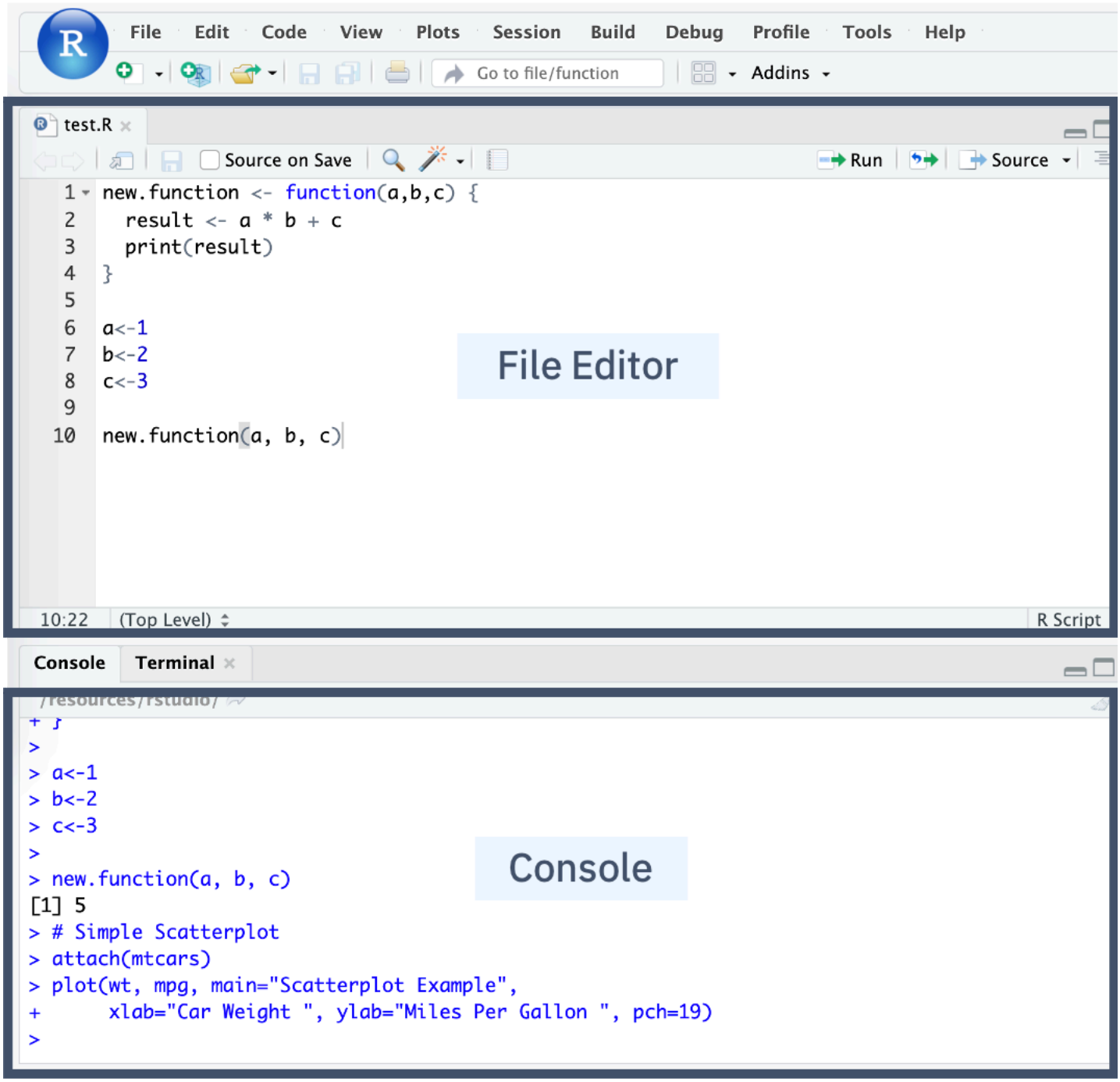
Learning Objectives

- Get familiar with RStudio
- Write your first R code snippet in RStudio

RStudio main UI

In this lab, you will be introduced to RStudio, the most popular and also a powerful IDE for developing R projects.

The main UI of RStudio is shown here:

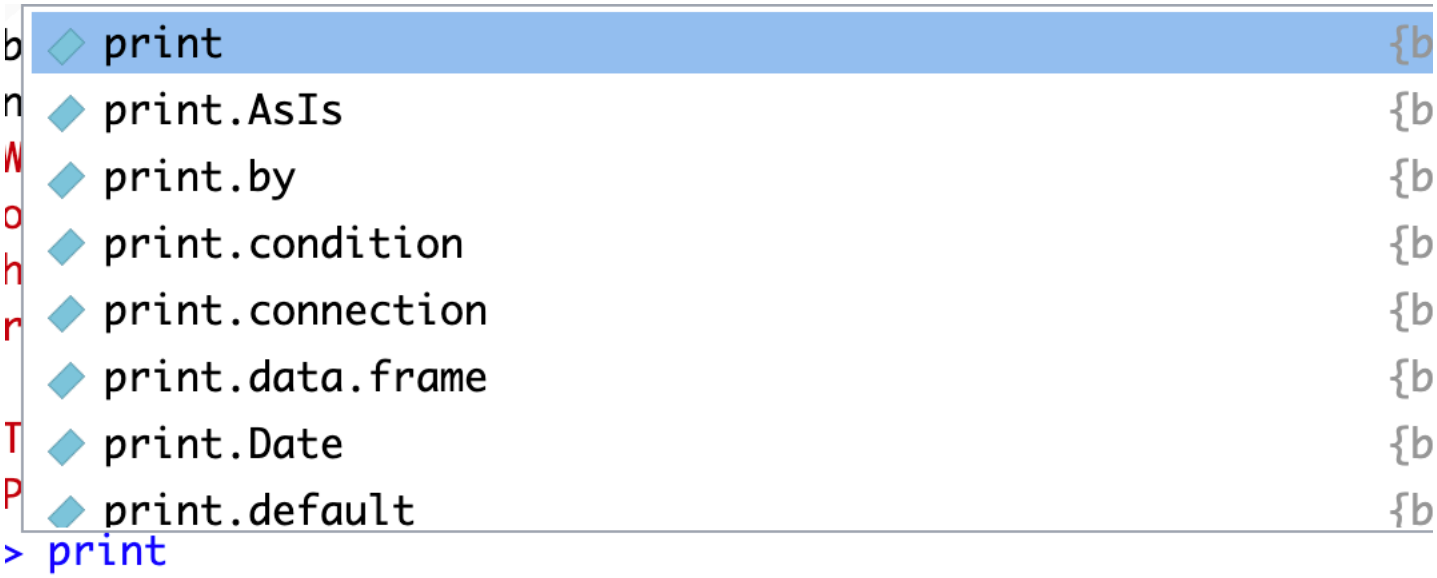


- In the `Console` panel, you can quickly try some R commands and see the results immediately.
- In the `File Editor` panel, you can write your R code or other text files with the help of syntax highlighting and auto completion.
- In the `Workspace` panel, you can review and manage the created objects
- In the `File/Plots/Package` Explorer panel, you can manage your files and other assets, such as plots or packages

Write the first Hello World code snippet in the Console

Let's write your first Hello World in RStudio Console.

- Find the blinking cursor in the Console panel, type an incomplete `prin` or `print` and pause a little bit for RStudio to pop up a suggestion list:



The auto-complete feature of RStudio can be very helpful to avoid memorizing all the code details and reduce keystrokes by just selecting from a suggestion list.

- Select the `print` function and add a character input `Hello World!`, then press Enter key:

```
print("Hello World!")
```

You should see `Hello World!` printed on the console.

That's it, you have written your first Hello World code snippet in RStudio.

For practice, you may play with the console by typing anything you have learned so far such as creating variables and basic math operations.

If you want to clear the console, you could just press `Ctrl` or `Control` + `L` key combination.

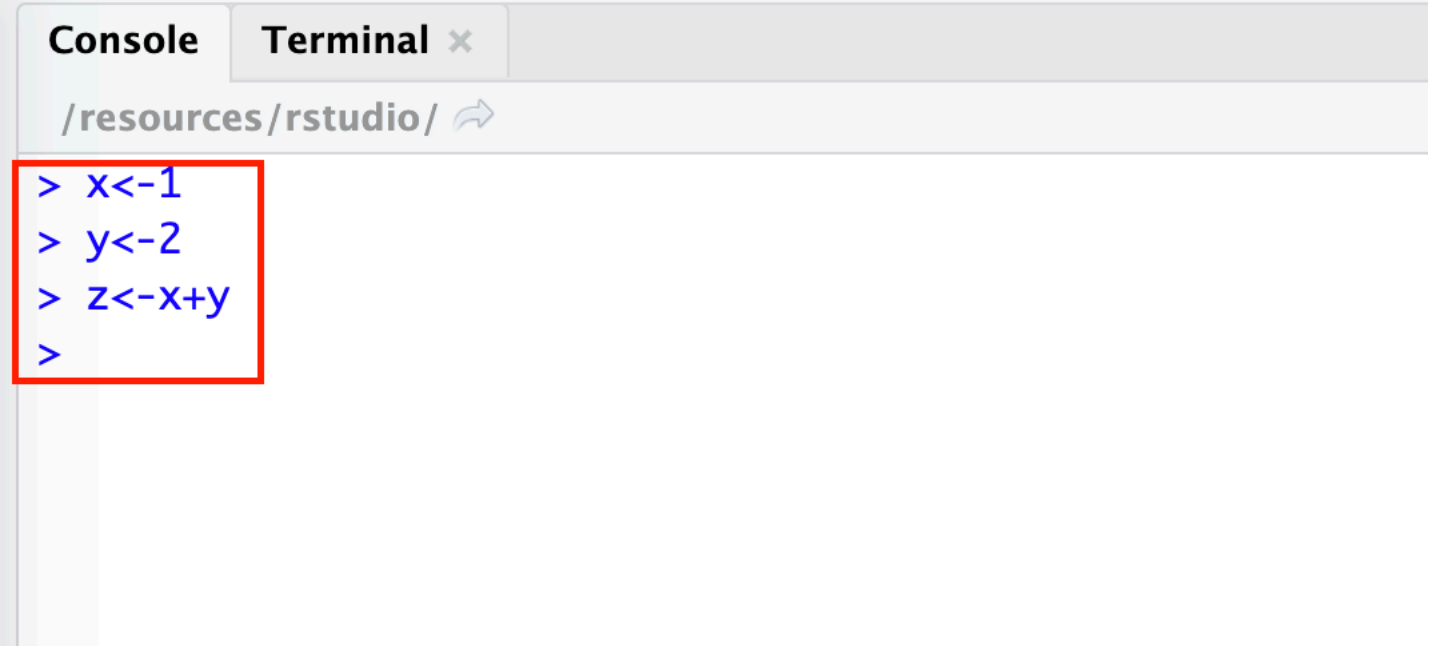
Review R objects in the Environment panel

Now let's try the Environment panel to review the R objects we created in console.

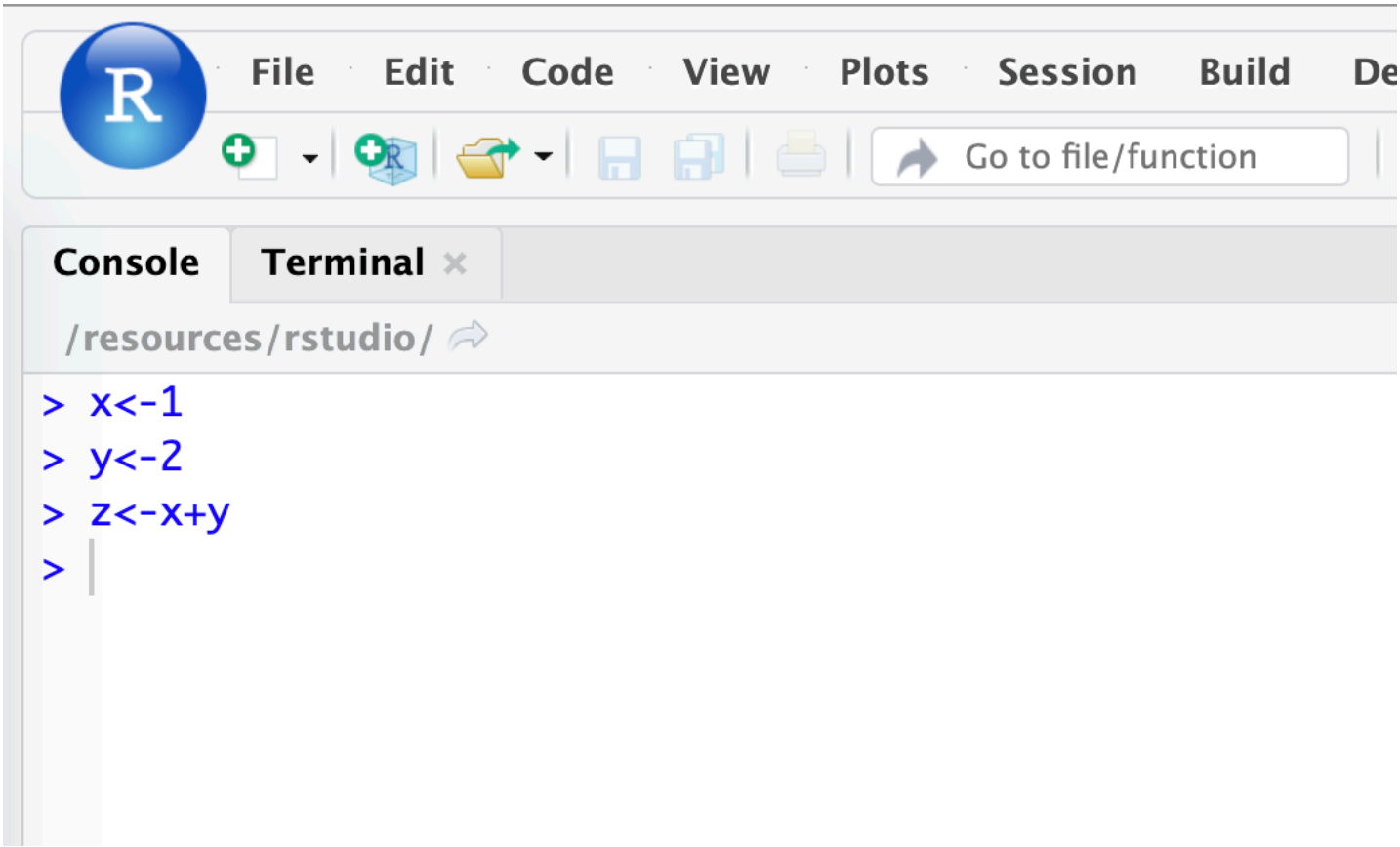
- Type the run the following three lines of code in console:

```
x<-1
y<-2
z<-x+y
```

and you should see three variables `x`, `y`, `z` with assigned values in the Environment panel.



- To clean the workspace, you can click the `Broom` icon as shown below:



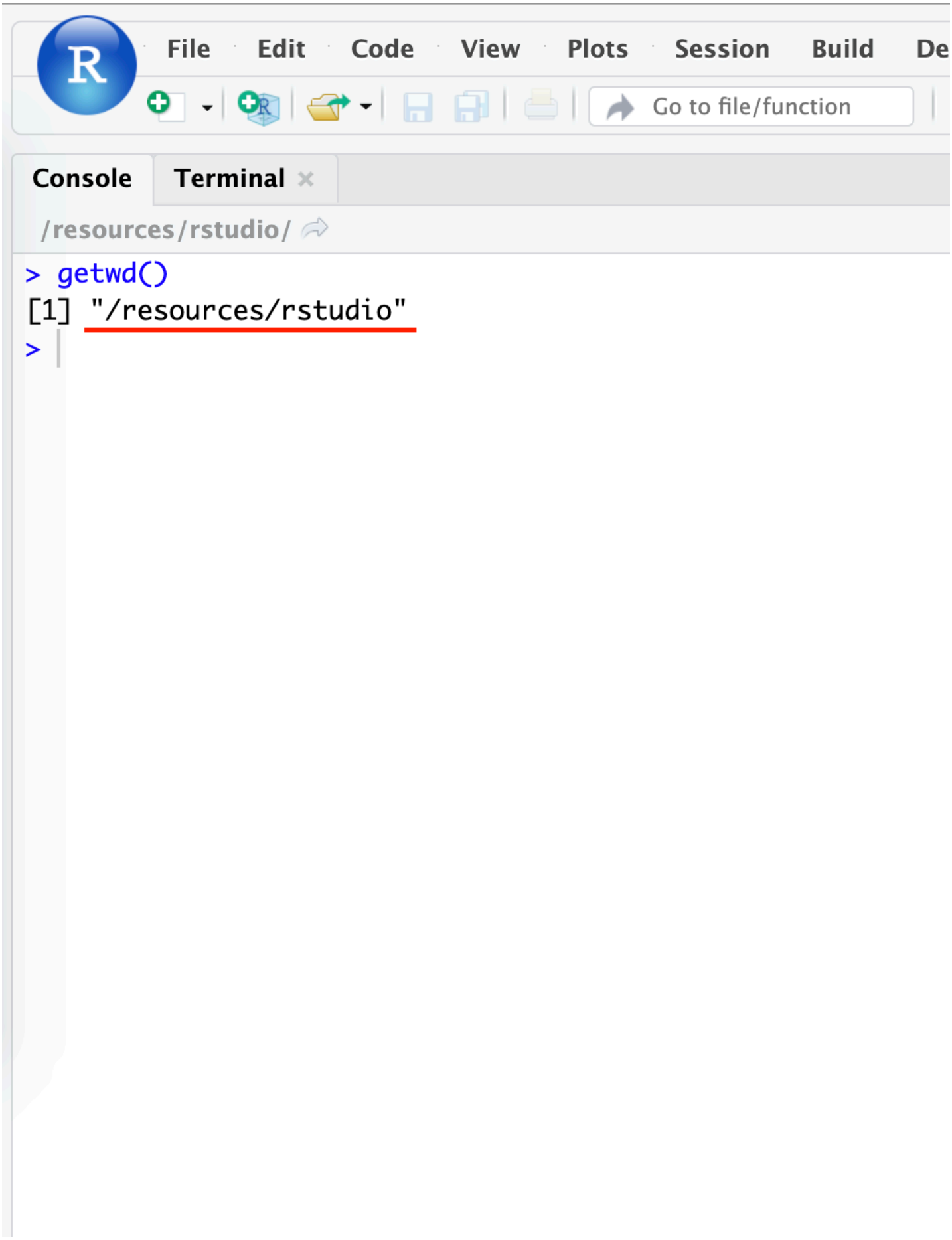
Create your first R script file

By now, you have written some simple R code in console interactively. Next, let's try creating a R script file with multiple lines of code and run them in batch mode.

- First, let's get the current working directory by running in console

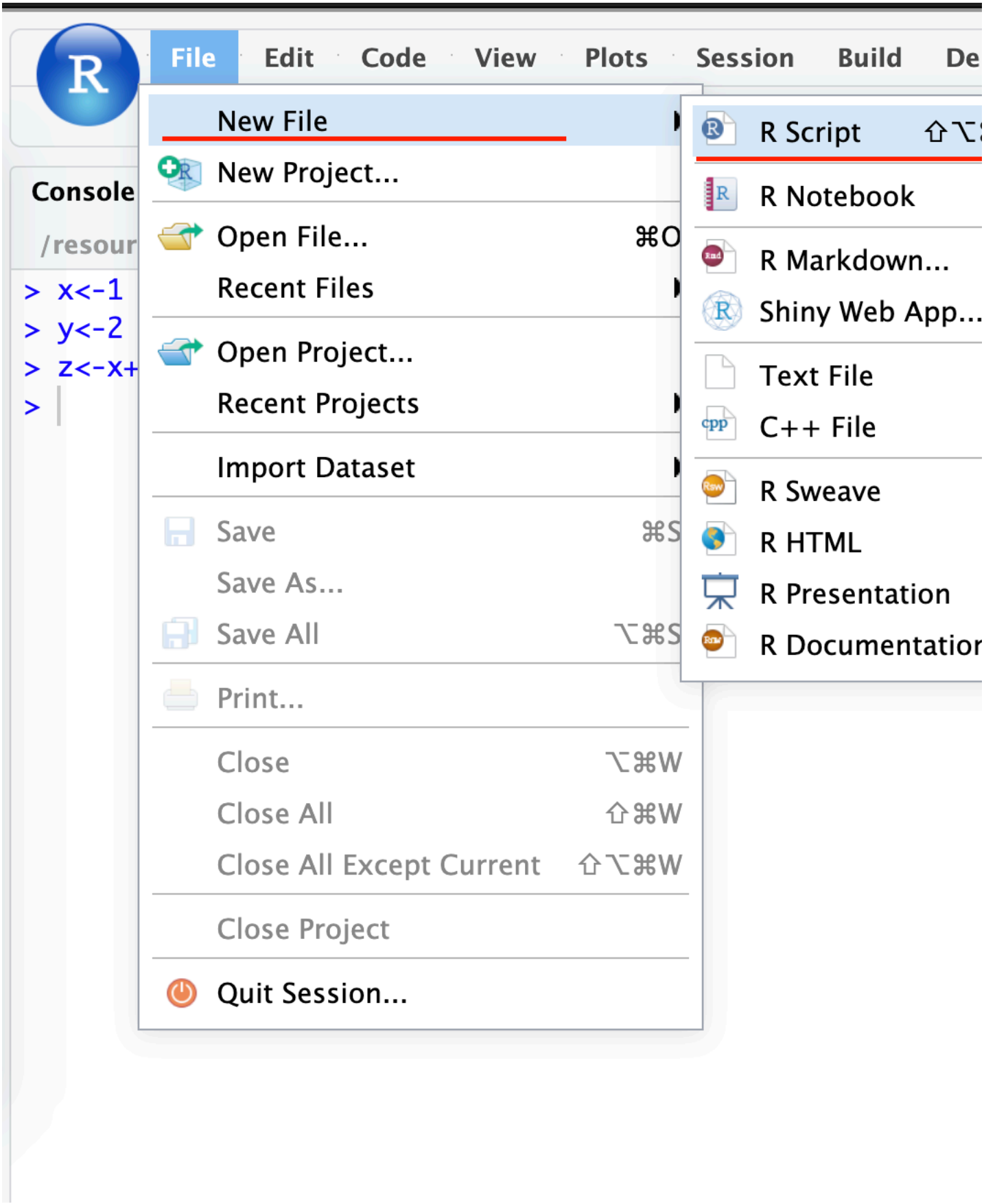
```
getwd()
```

and you should see a relative path `/resources/rstudio` gets printed and you can also find it in the `File` panel as shown in the below screenshot:



This is your current working directory storing all your R files such as script or dataset files.

- Next, from the menu click `File -> New File -> R Script`



- Then click `File -> Save`, and make the file name like `first_script`. After the script file is saved, you can see an empty file called `first_script.R` file created in your working directory.
- Next, click `first_script.R` file to add following code snippet:

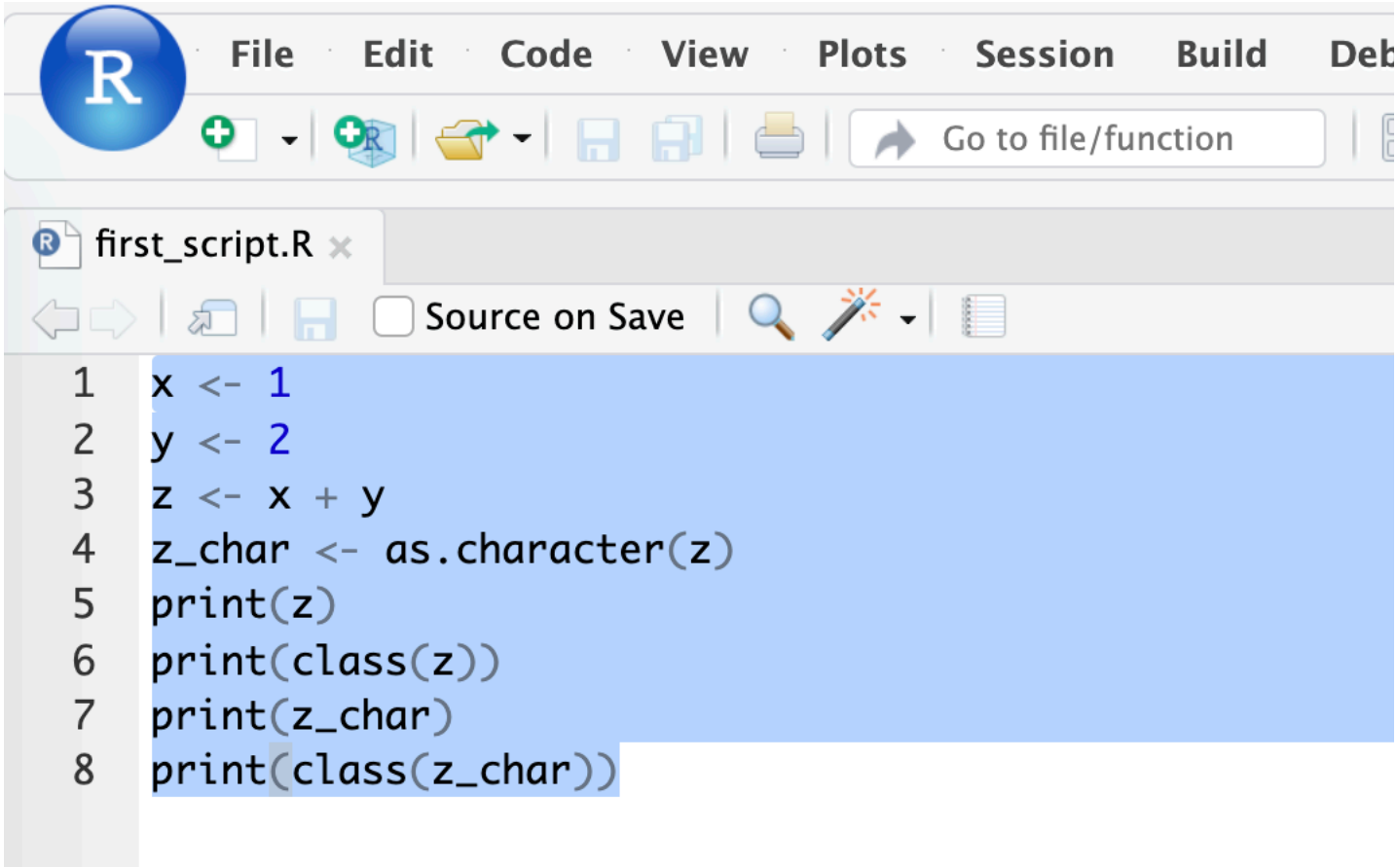
```
x <- 1
y <- 2
z <- x + y
z_char <- as.character(z)
print(z)
print(class(z))
print(z_char)
print(class(z_char))
```

You need to make sure the last line of th file is a new empty line.

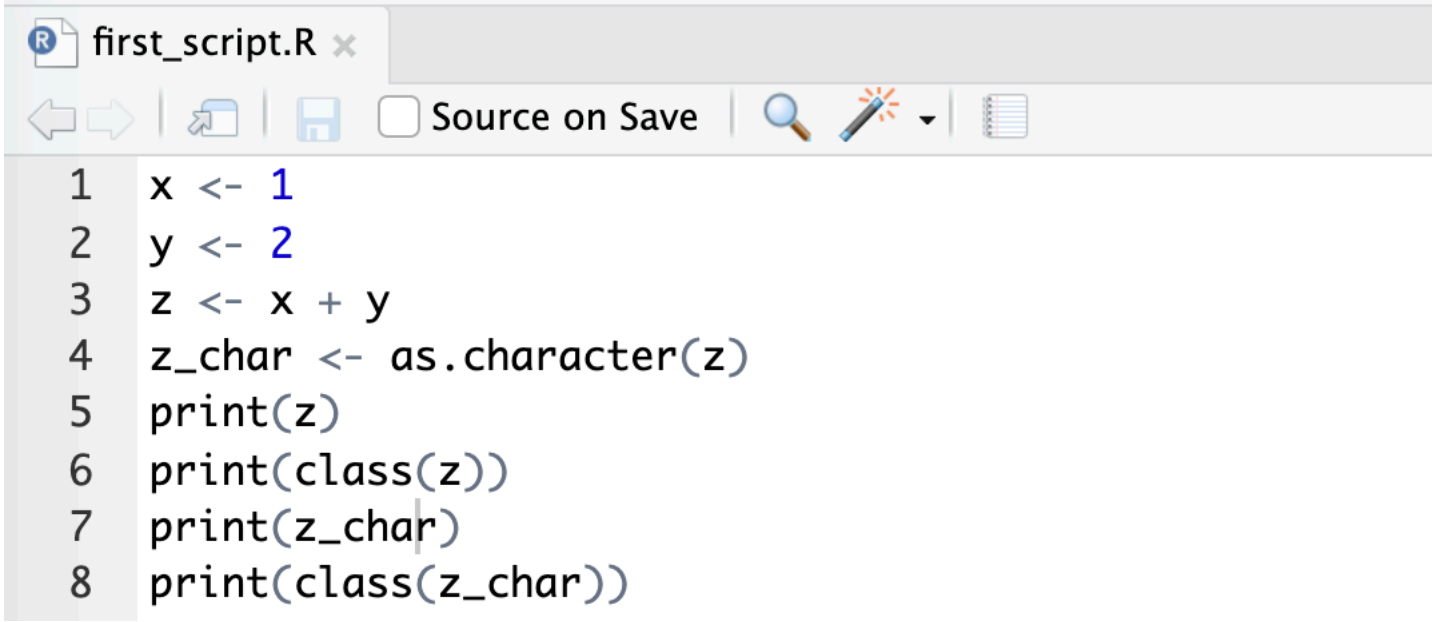
So after copying the above code snippet, you need to press the `Enter` key to start a new line in the script file.

Now we can run the code in the script file, there are two running modes:

- The first one is called `Run the current line or selection`.
  You can left-click and drag your mouse or use `Shift` + Upper/Down keys to select all lines and click the following `Run` icon to run them:



- The second one is called `Source` where it runs all lines of code in the file by clicking the following `Source` icon:



and you should see the results in console:

```
source('/resources/rstudio/first_script.R')
[1] 3
[1] "numeric"
[1] "3"
[1] "character"
```

That's it about creating and running R script file!

Summary

In this lab, you have been introduced to RStudio. You have practiced how to write and run R code in both console and in R script files. You used the Environment panel to review the R objects in your workspace.

Author(s)

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