

Introduction to Statistics

Contents

About this course	1
1 Introduction to R and RStudio	1
1.1 Learning objectives	1

About this course

This course is an introduction to statistics, R and RStudio. Our primary aims are to introduce you to and help you become familiar with RStudio and quantitative methodologies critical to your development as an analyst.

By the end of the course, you should be able to understand fundamental research methods, apply them to real world problems and acquire competency in performing statistical functions using R.

Slides day 1

1 Introduction to R and RStudio

1.1 Learning objectives

In this session, we will have a look at R and RStudio. We will interact with both and use the various components of RStudio.

1.1.1 What is R?

R is an environment for statistical computing and graphics. RStudio is an editor or integrated development environment (IDE) that makes working with R much more comfortable.

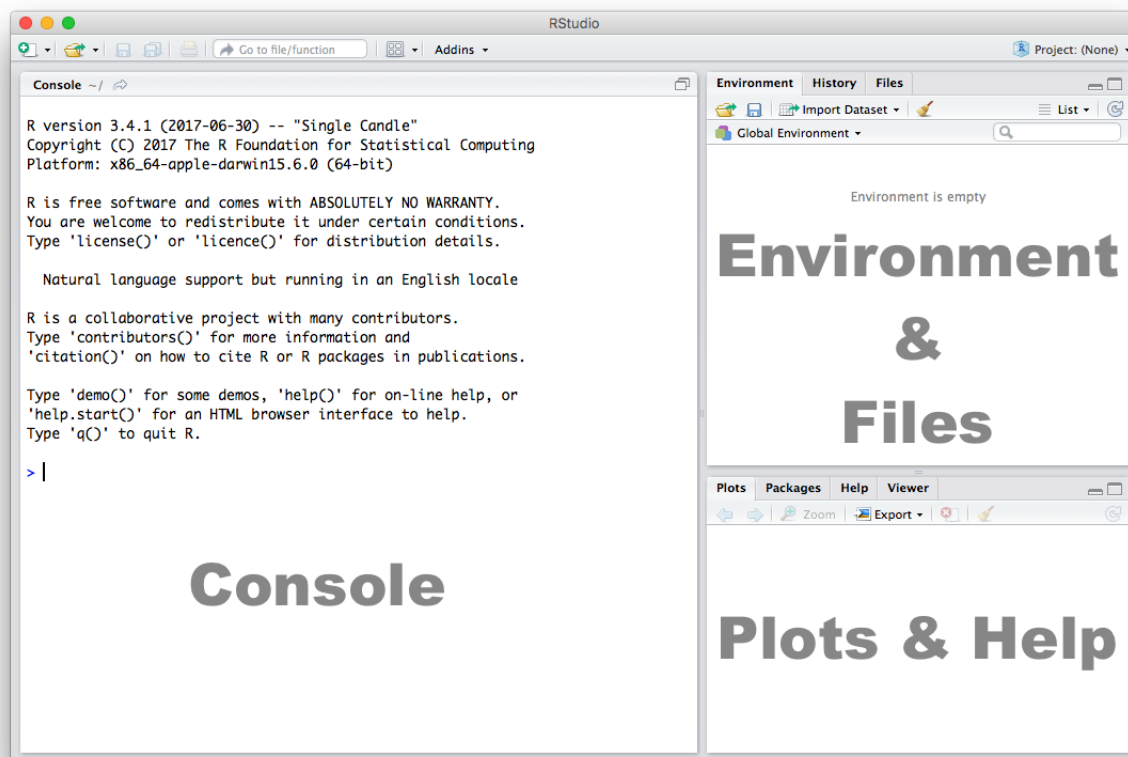
To install R and RStudio on your computer, download both from the following sources:

- Download R from The Comprehensive R Archive Network (CRAN)
- Download RStudio from RStudio.com

Keep both R and RStudio up to date. That means go online and check for newer versions. In case there are new versions, download those and re-install.

1.1.2 RStudio

Let's get acquainted with R. When you start RStudio for the first time, you'll see three panes:



1.1.3 Console

The Console in RStudio is the simplest way to interact with R. You can type some code at the Console and when you press ENTER, R will run that code. Depending on what you type, you may see some output in the Console or if you make a mistake, you may get a warning or an error message.

Let's familiarize ourselves with the console by using R as a simple calculator:

```
2 + 4
```

```
[1] 6
```

Now that we know how to use the + sign for addition, let's try some other mathematical operations such as subtraction (-), multiplication (*), and division (/).

```
10 - 4
```

```
[1] 6
```

```
5 * 3
```

```
[1] 15
```

```
7 / 2
```

```
[1] 3.5
```



You can use the cursor or arrow keys on your keyboard to edit your code at the console:- Use the UP and DOWN keys to re-run something without typing it again- Use the LEFT and RIGHT keys to edit

Take a few minutes to play around at the console and try different things out. Don't worry if you make a mistake, you can't break anything easily!

1.1.4 Scripts

The Console is great for simple tasks but if you're working on a project you would mostly likely want to save your work in some sort of a document or a file. Scripts in R are just plain text files that contain R code. You can edit a script just like you would edit a file in any word processing or note-taking application.

Create a new script using the menu or the toolbar button as shown below.



Once you've created a script, it is generally a good idea to give it a meaningful name and save it immediately. For our first session save your script as **seminar1.R**



Familiarize yourself with the script window in RStudio, and especially the two buttons labeled **Run** and **Source**

There are a few different ways to run your code from a script.

One line at a time

Place the cursor on the line you want to run and hit CTRL-ENTER or use the **Run** button

Multiple lines	Select the lines you want to run and hit CTRL-ENTER or use the Run button
Entire script	Use the Source button
