Preliminaries in R

How to "talk" to R

How to "talk" to R

1. Open an **R session**
2. At the **prompt** in the **console**, enter an **R expression**
3. Read R's "response" (the **output**)
4. Repeat 2 and 3
5. Close the R session

Opening an R session

An **R session** is an instance of you using R.

To open an R session, double-click on the icon for "RStudio" on you computer. When RStudio opens, you will be in a "fresh" R session, unless you restore a saved session (which I strongly recommend against).
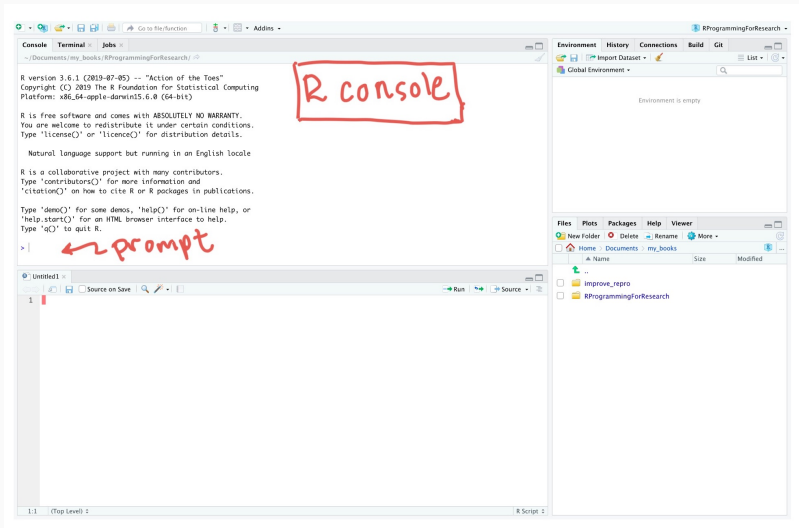
This means that, once you open RStudio, you will need to "set up" your session, including loading any packages you need (which we'll talk about later) and reading in any data (which we'll also talk about).

The prompt in the console

In RStudio, there screen is divided into several "panes". We'll start with the pane called "Console".

The **console** lets you "talk" to R. This is where you can "talk" to R by typing an **expression** at the **prompt** (the caret symbol, ">"). You press the "Return" key to send this message to R.

How R might respond

Once you press "Return", R will respond in one of three ways:

1. R does whatever you asked it to do with the expression and prints the output (if any) of doing that, as well as a new prompt so you can ask it something new

2. R doesn't think you've finished asking you something, and instead of giving you a new prompt (">") it gives you a "+". This means that R is still listening, waiting for you to finish asking it something.

3. R tries to do what you asked it to, but it can't. It gives you an **error message**, as well as a new prompt so you can try again or ask it something new.

R expressions, function calls, and objects

To "talk" with R, you need to know how to give it a complete **expression**.

Most expressions you'll want to give R will be some combination of two elements:

1. **Function calls**
2. **Object assignments**

We'll go through both these pieces and also look at how you can combine them together for some expressions.

R expressions, function calls, and objects

According to John Chambers, one of the creators of R's precursor S:

1. Everything that exists in R is an **object**
2. Everything that happens in R is a **call to a function**