

R and RStudio Quick Start

First you need to install R (the language) and RStudio (the interface that allows us to use the language).

You can install R from here:

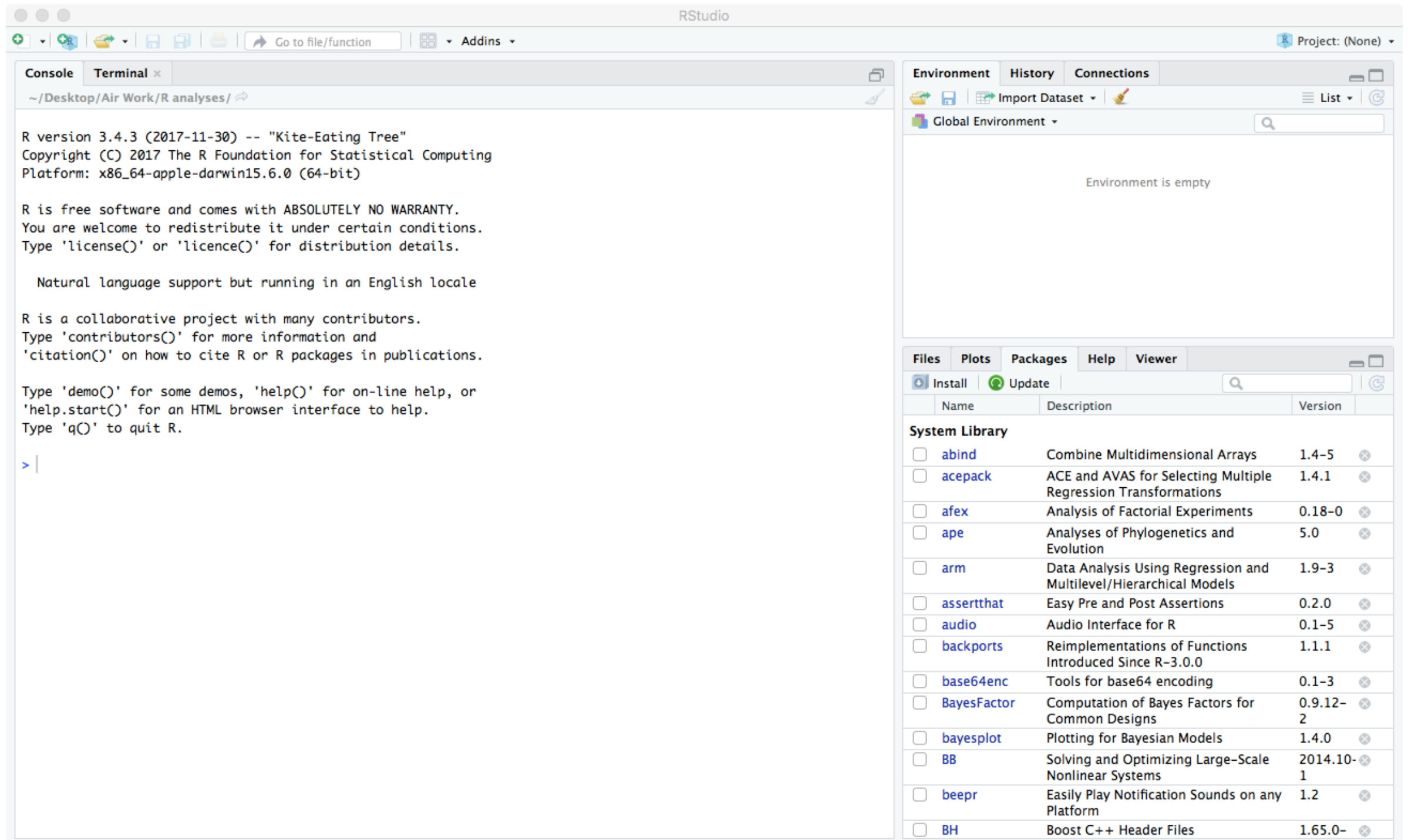
<https://www.stats.bris.ac.uk/R/>

And RStudio from here:

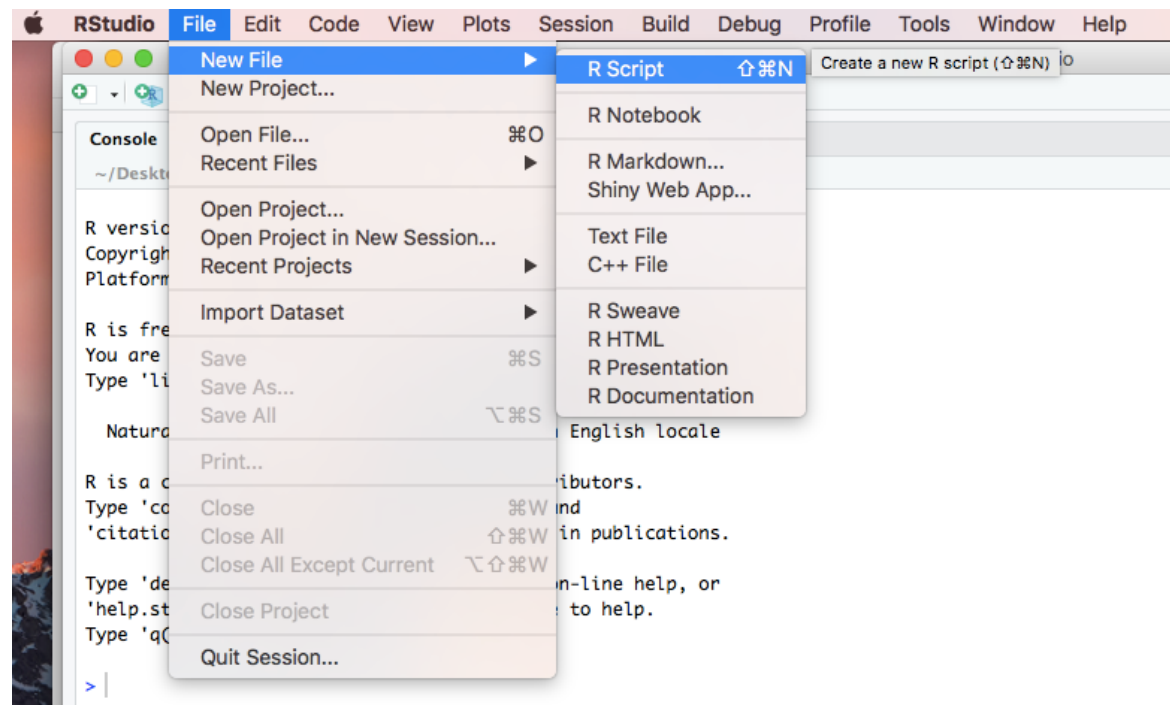
<https://www.rstudio.com/products/rstudio/download/#download>

Once both are installed, click on RStudio to begin...

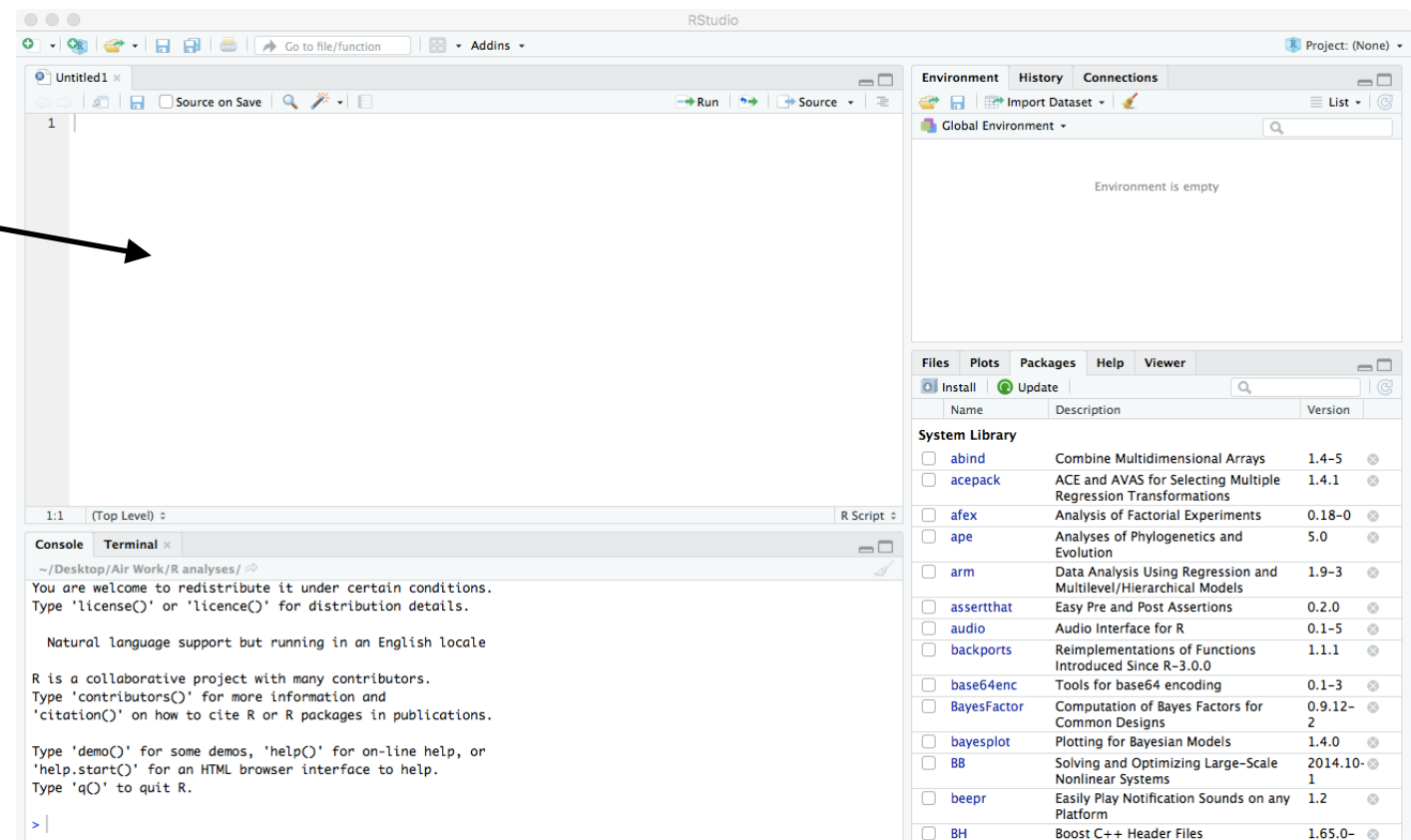
When you first start RStudio it will look like this:



You can start a new R Script like this:

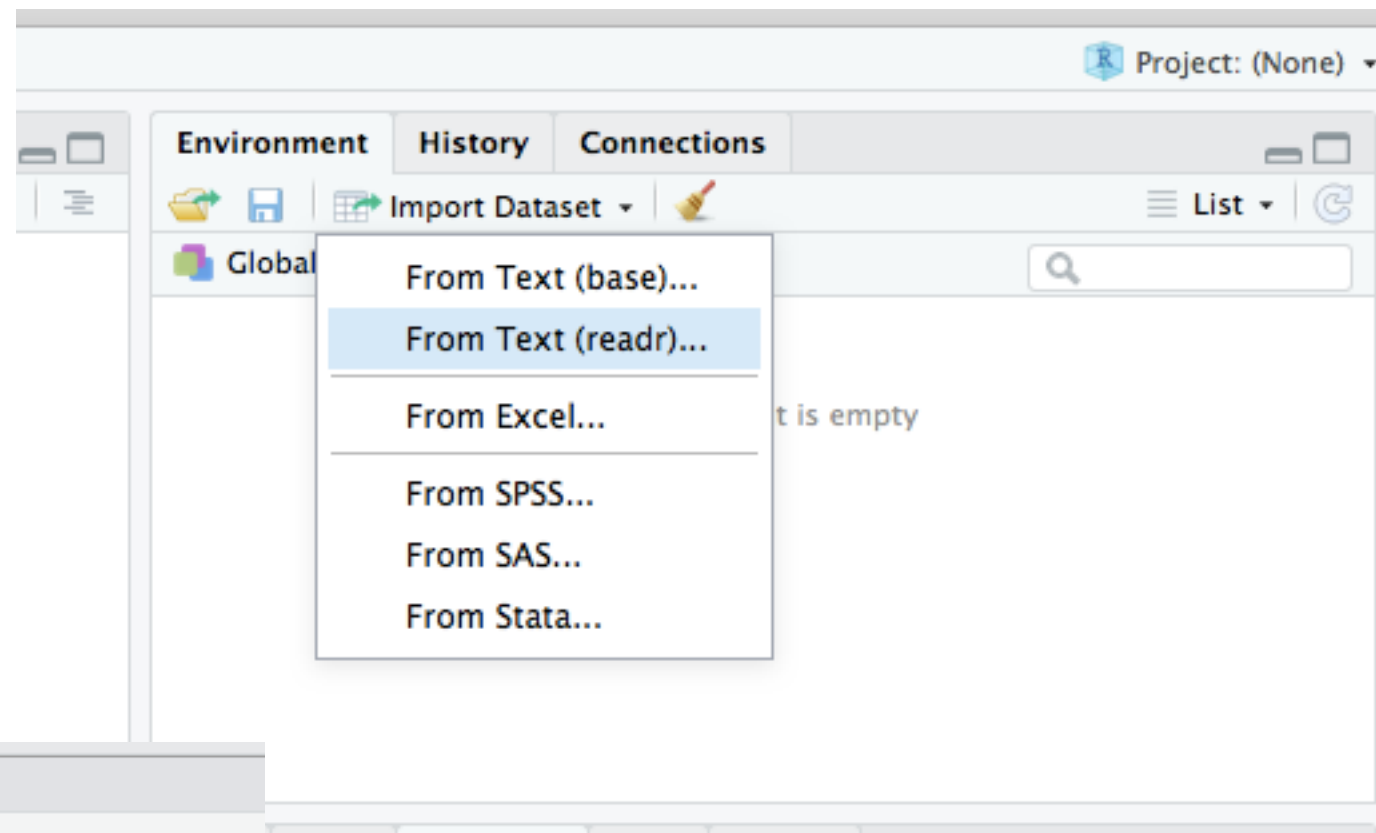


You can start writing your script here



Now import some data.

I'm going to import
some data in .csv
format.



Import Text Data			
File/Url:			
~/Desktop/Air Work/R analyses/MRes/MRes Semester 2/R Day 3 - LMM Workshop/w3data1.csv			
Data Preview:			
Subject (integer) ▾	Item (integer) ▾	RT (integer) ▾	Condition (character) ▾
1	3	1370	Guess
1	7	839	Character
1	11	1082	Double
1	15	1391	Integer
1	19	1834	Numeric
1	23	1857	Logical
1	27	1152	Date
2	4	1806	Time
2	8	633	DateTime
2	12	1109	Factor
2	16	1039	

I choose my file, and
then tell R which
column is a factor - I
then need to specify
the names of the factor
levels (which are *Rare*
and *Common*) for the
column labelled
“Condition”.

RStudio now looks like this:

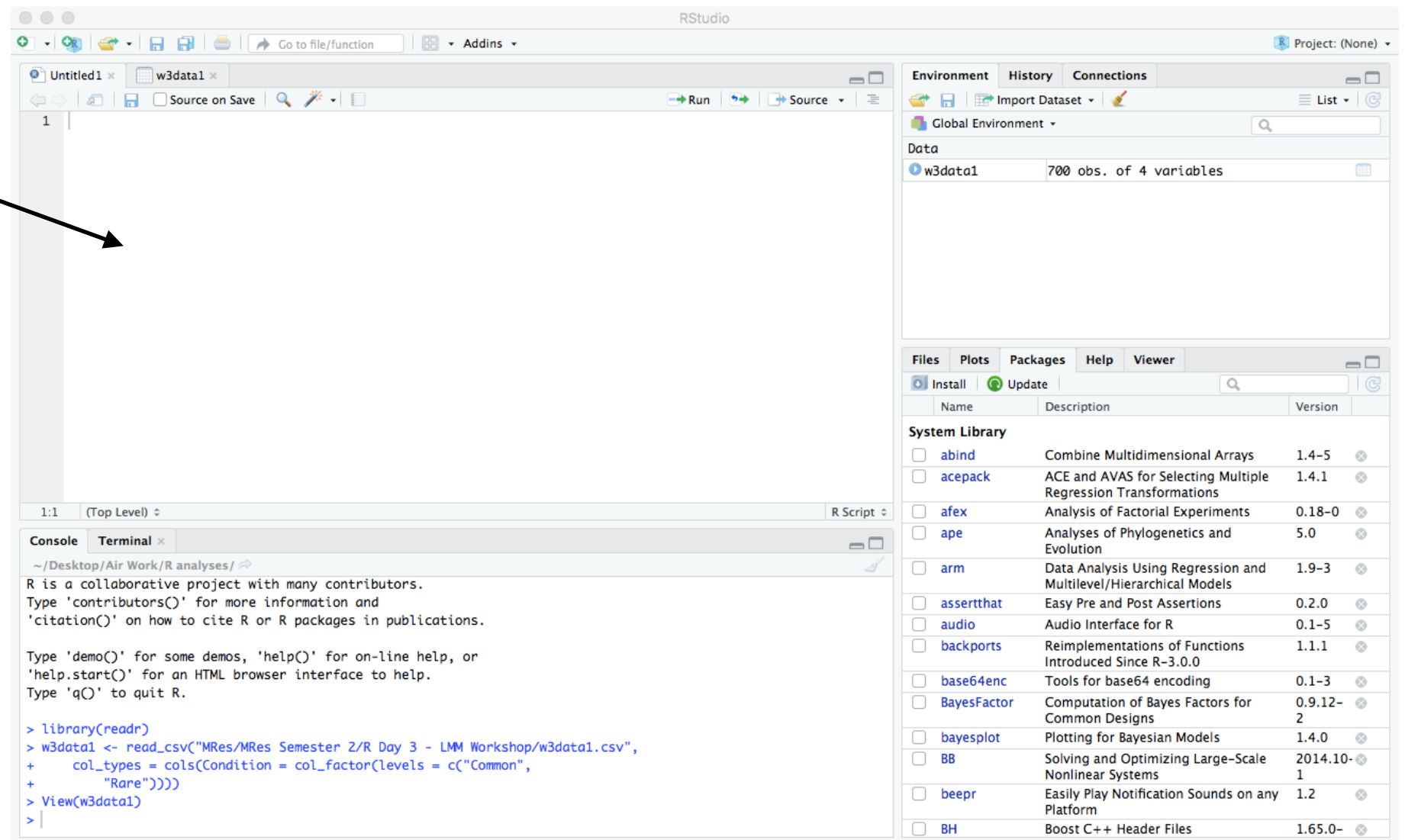
The screenshot displays the RStudio interface with the following components:

- Top Panel:** Includes a toolbar with icons for file operations and a search bar. The title bar shows "RStudio" and "Project: (None)".
- Left Panel:** Contains a file explorer showing "Untitled1" and "w3data1". Below it is a data table with columns: Subject, Item, RT, and Condition. The table shows 15 rows of data, with the first row being Subject 1, Item 1, RT 3, Condition Rare. An arrow points to the table with the text "Here are my data".
- Right Panel:** Contains the "Environment" pane, which shows the "Global Environment" and a list of data objects. The "Data" section shows "w3data1" with 700 observations and 4 variables.
- Bottom Panel:** Contains the "Console" and "Terminal" panes. The console shows the R prompt and the following code:

```
> library(readr)
> w3data1 <- read_csv("MRes/MRes Semester 2/R Day 3 - LMM Workshop/w3data1.csv",
+   col_types = cols(Condition = col_factor(levels = c("Common",
+   "Rare"))))
> View(w3data1)
>
```

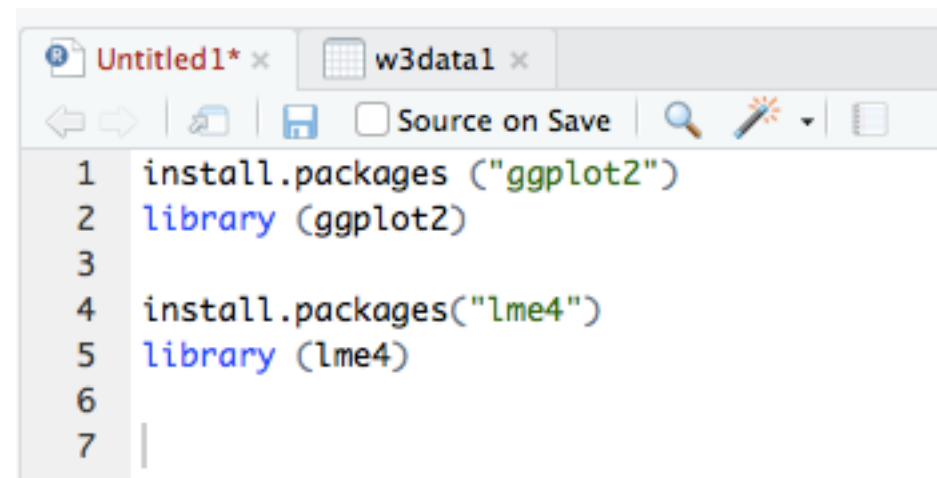
I can now start writing my script here.

Don't forget to first add code to load the packages you need.



Here I am downloading the ggplot2 and the lme4 packages. If you have already downloaded them you can just load them using the `library (packagename)` function.

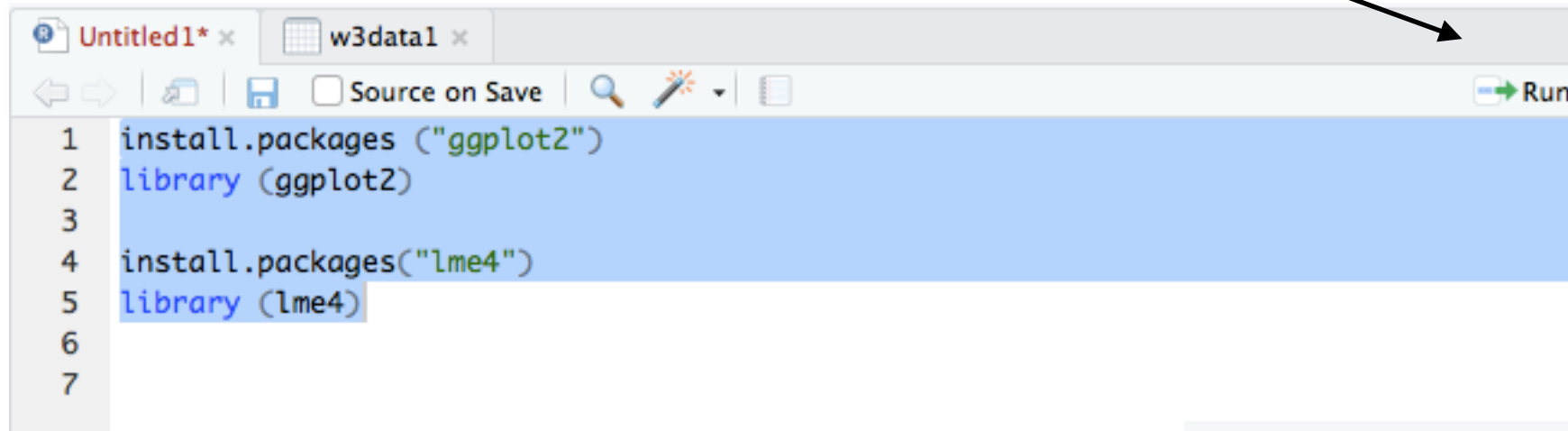
Don't forget to save your script as you go along - when its title is in **red, it means you have made changes to your script since it was last saved.**



The screenshot shows an R script editor window with two tabs: 'Untitled1*' and 'w3data1'. The 'Untitled1*' tab is active, and its title is in red. The script contains the following code:

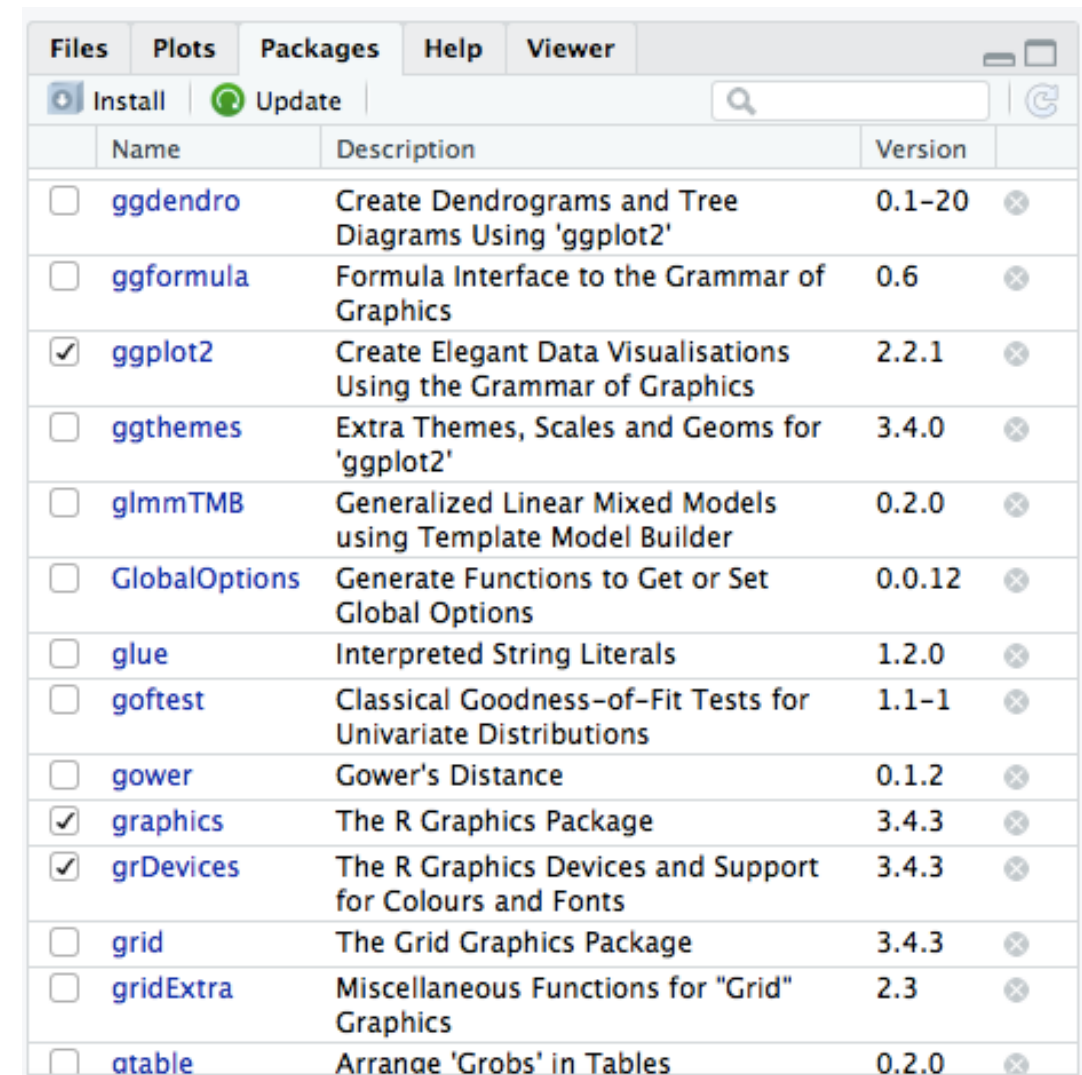
```
1 install.packages ("ggplot2")
2 library (ggplot2)
3
4 install.packages("lme4")
5 library (lme4)
6
7
```


Highlight the code you want to run, and then either press **CMD-Return** or click **Run**.



```
1 install.packages ("ggplot2")
2 library (ggplot2)
3
4 install.packages("lme4")
5 library (lme4)
6
7
```

You will now see ticks besides these packages in the window on the bottom right.



Files	Plots	Packages	Help	Viewer
Install Update				
	Name	Description	Version	
<input type="checkbox"/>	ggdendro	Create Dendrograms and Tree Diagrams Using 'ggplot2'	0.1-20	⊗
<input type="checkbox"/>	ggformula	Formula Interface to the Grammar of Graphics	0.6	⊗
<input checked="" type="checkbox"/>	ggplot2	Create Elegant Data Visualisations Using the Grammar of Graphics	2.2.1	⊗
<input type="checkbox"/>	ggthemes	Extra Themes, Scales and Geoms for 'ggplot2'	3.4.0	⊗
<input type="checkbox"/>	glmmTMB	Generalized Linear Mixed Models using Template Model Builder	0.2.0	⊗
<input type="checkbox"/>	GlobalOptions	Generate Functions to Get or Set Global Options	0.0.12	⊗
<input type="checkbox"/>	glue	Interpreted String Literals	1.2.0	⊗
<input type="checkbox"/>	gofest	Classical Goodness-of-Fit Tests for Univariate Distributions	1.1-1	⊗
<input type="checkbox"/>	gower	Gower's Distance	0.1.2	⊗
<input checked="" type="checkbox"/>	graphics	The R Graphics Package	3.4.3	⊗
<input checked="" type="checkbox"/>	grDevices	The R Graphics Devices and Support for Colours and Fonts	3.4.3	⊗
<input type="checkbox"/>	grid	The Grid Graphics Package	3.4.3	⊗
<input type="checkbox"/>	gridExtra	Miscellaneous Functions for "Grid" Graphics	2.3	⊗
<input type="checkbox"/>	otable	Arrange 'Grobs' in Tables	0.2.0	⊗