

VISUAL ANALYTICS

INTRODUCTION

TO R

TUTORIAL 1

Petra Isenberg

BUT FIRST WE NEED TO LEARN THE TOOLS

An introduction to R

The screenshot shows the RStudio interface. The console pane on the left contains the following text:

```
R version 3.1.1 (2014-07-10) -- "Sock it to Me"
Copyright (C) 2014 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.

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.

[workspace loaded from ~/.RData]

Loading required package: RCurl
Loading required package: bitops
> |
```

A red arrow points from the bottom of the console to the text box below. The environment pane on the right shows "Global Environment" and "Environment is empty". The viewer pane at the bottom right shows the documentation for the `html_text` function, with the title "Extract attributes, text and tag name from html." and a description "Extract attributes, text and tag name from html."

R is an interpreted language. Type code here and have it executed

The screenshot displays the RStudio interface with three main panels. The left panel is the console, showing R version information and the execution of several commands to create matrices A and B. The top right panel is the workspace, which lists two active objects, A and B, both of type '4x2 double matrix'. The bottom right panel is the files tab, showing a file explorer view of the current workspace directory, listing a file named '.Rhistory'.

Console Output:

```
R version 3.0.0 (2013-04-03) -- "Masked Marvel"
Copyright (C) 2013 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.

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.

> getwd()
[1] "H:/MyData/RFiles"
> 5*5
[1] 25
> A <- matrix(c(1,2,3,4,5,6,7,8), nrow=4, ncol=2)
> A
  [,1] [,2]
[1,]  1   5
[2,]  2   6
[3,]  3   7
[4,]  4   8
> B <- matrix(c(1,2,3,4,5,6,7,8), nrow=4, ncol=2, byrow=TRUE)
> B
  [,1] [,2]
[1,]  1   2
[2,]  3   4
[3,]  5   6
[4,]  7   8
>
```

Workspace:

Data	
A	4x2 double matrix
B	4x2 double matrix

Files:

Name	Size	Modified
..		
.Rhistory	34 bytes	Aug 23, 2013, 1:26 PM

The **workspace** tab shows all the active objects (see next slide). The **history** tab shows a list of commands used so far.

The **files** tab shows all the files and folders in your default workspace as if you were on a PC/Mac window. The **plots** tab will show all your graphs. The **packages** tab will list a series of packages or add-ons needed to run certain processes. For additional info see the **help** tab

The **console** is where you can type commands and see output

HELLO WORLD

Type into your console

```
> print("Hello world!")
```

output:

```
[1] "Hello world!"
```

QUICK R TUTORIALS

Let's get you to work:

```
> install.packages("swirl")  
  
> library(swirl)  
> install_from_swirl("R Programming")  
> swirl()
```

Choose "R Programming"

If you are new to R complete the following lessons:

1, 2, 4, 7

If you are already a proficient R user pick a lesson that interests you

- | when you are at the R prompt (>): |
- Typing skip() allows you to skip the current question. |
- Typing play() lets you experiment with R on your own; swirl | will ignore what you do... |
- UNTIL you type nxt() which will regain swirl's attention. |
- Typing bye() causes swirl to exit. Your progress will be | saved. |
- Typing main() returns you to swirl's main menu. |
- Typing info() displays these options again.