Introduction to R

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Intro to R

What is R?

Installing R

Data structures in R

Resources

Hands-on practice using r script

What is R?

Based on S-language;

First written as a research project by Ross Ihaka and Robert Gentleman

Now undergoing active development under R core team: www.r-project.org

Freely available

Forum/environment that allows development of different data analysis packages

More than 4400 add-on packages; 25 standard packages

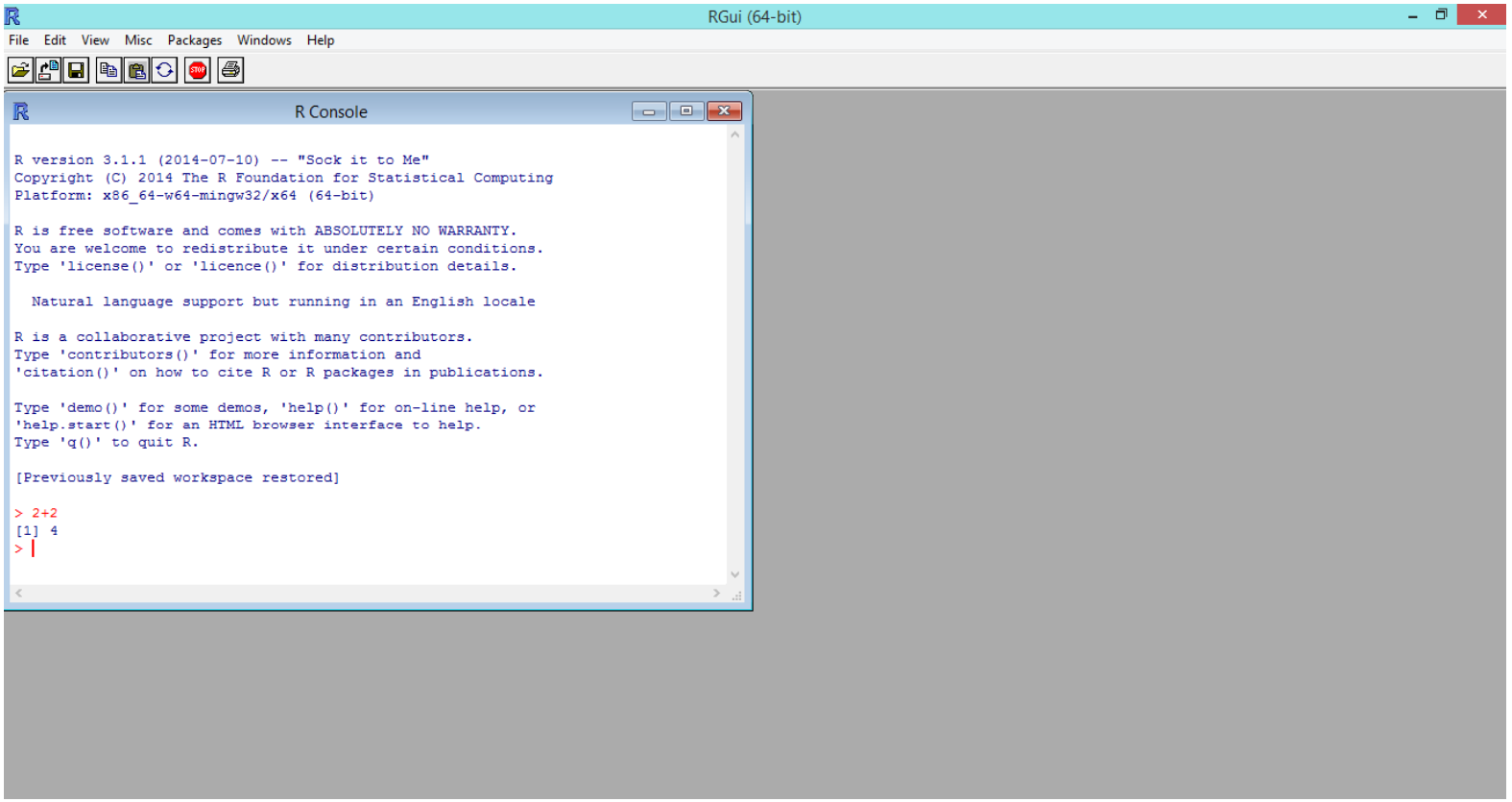
Simple syntex

Installing R

Complete installing instructions at www.http://cran.r-project.org/

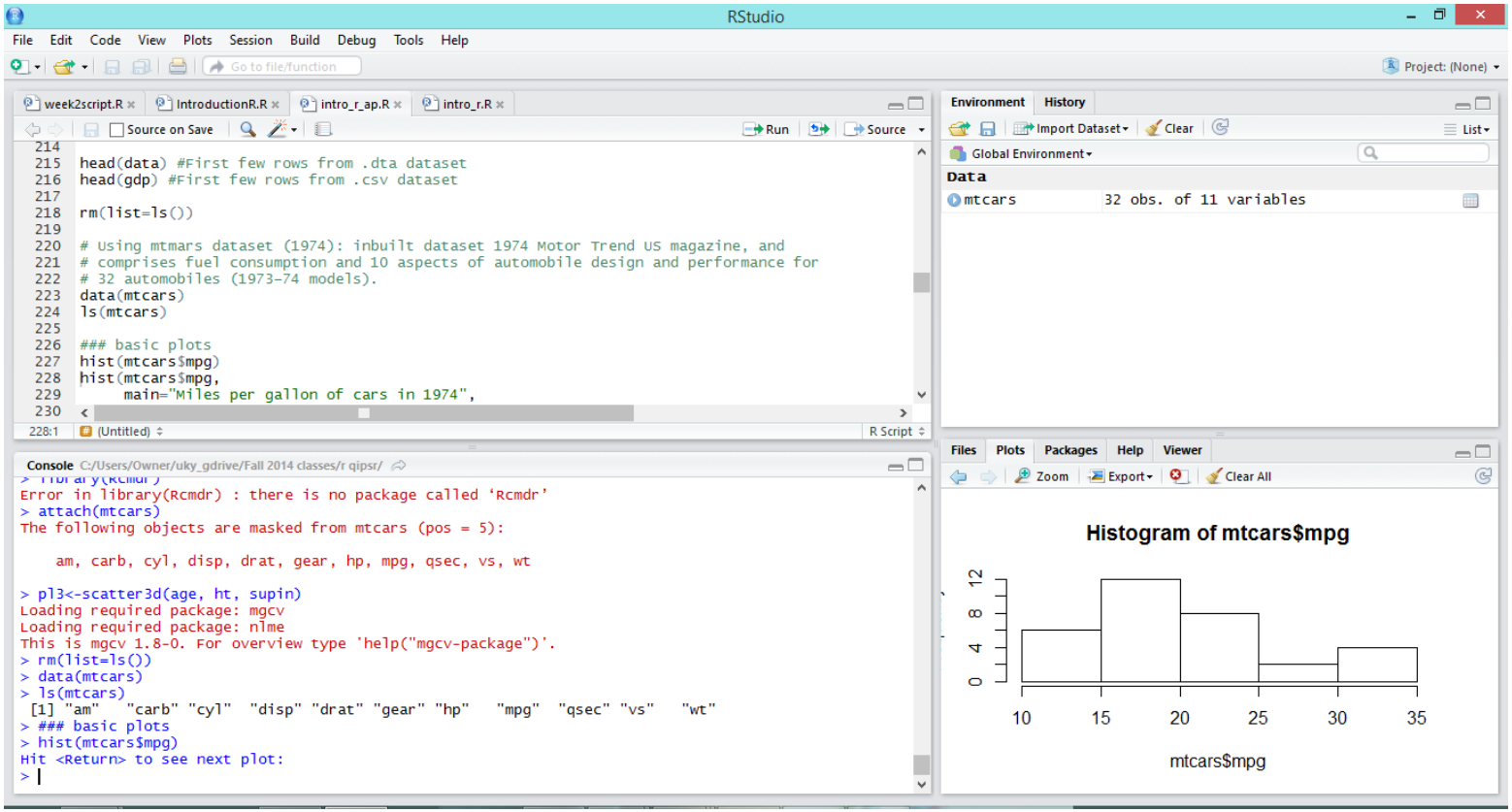
Install latest version 3.1.1

This will install basic Graphical User Interface or GUI: R Console



Installing R

There are many such interfaces. I use R Studio



Data Structure in R

Important to understand, as there are some feature that are different than other statistical softwares like STATA

R uses RAM to store local file which has limited space. Therefore problematic when reading huge files

R objects: Vectors, arrays, character strings, functions, data frames and lists.

Most easy to understand: dataframes - rows and columns

R object that contains many dataframes of different sizes, vectors, functions etc is called list

A list can also contain another list

This feature of R makes it very flexible

Data structure in R

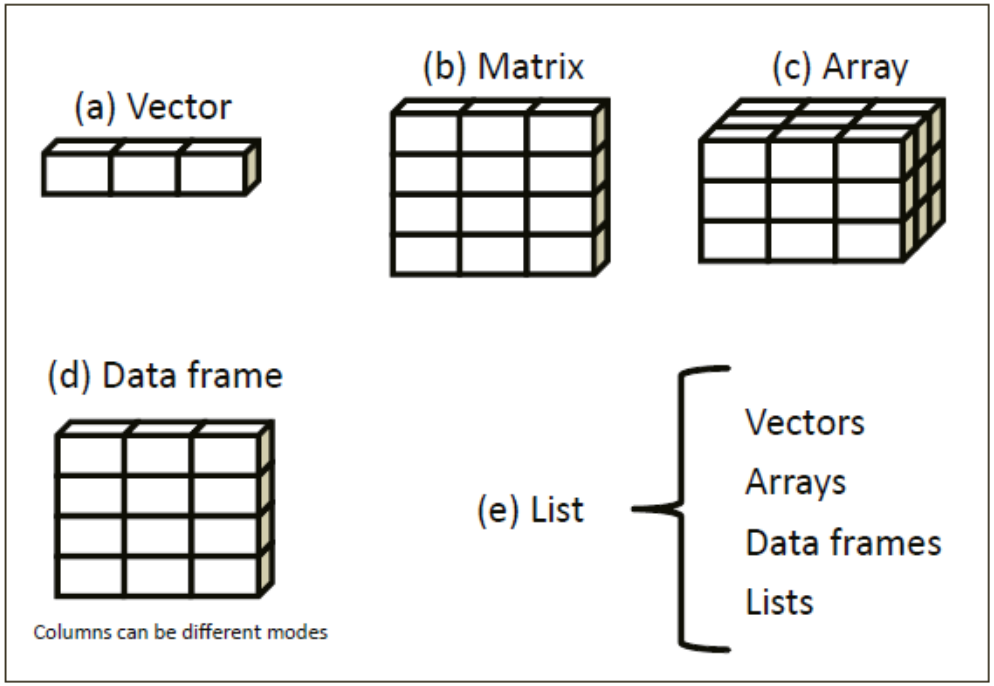


Figure 2.1 **R data structures**

Source: Kabakoff(2012:23)

Resources

Lots of resources in the web

Start with R-cran FAQ

websites:

- http://cran.r-project.org/doc/manuals/R-intro.pdf
- http://data.princeton.edu/R/default.html
- David Armstrong's ICPSR class handouts on R: http://www.quantoid.net/ICPSRR.html

R-Project website has collection of R documents, journals and proceedings: http://www.r-project.org/other-docs.html

An excellent resource is: http://www.twotorials.com/. It has collections of 2 minute videos on using R.

I mostly google and find answers in STACK OVERFLOW: which is repository of Q and A from people using different programming languages including R

Resources

Books:

- R in Action: Data Analysis and Graphics with R (2014) by Robert Kabacoff
- R Cookbook (2011) by Paul Teeter
- Art of R programming: A Tour of Statistical Software Design (2011) by Norman Matloff
- Discovering Statistics Using R (2012) by Andy Field, Jeremy Miles, Zoe Field

For latest books on R, go to:
http://www.r-project.org/doc/bib/R-books.html

Let us now go to R for more hands-on learning?