

Summing Up

Why use R?

Revolution Analytics introduce R in 93 sec:

https://youtu.be/TR2bHSJ_eck

What can R do?

Lots!:

<http://cran.r-project.org/web/views/>

Why use RStudio to use R

Key Features of the RStudio IDE:

<https://vimeo.com/97166163>

R consortium announced:

- <https://www.r-consortium.org/>

Plans to implement R into SQL:

- <http://blog.revolutionanalytics.com/2015/05/r-in-sql-server.html>

Microsoft buys Revolution Analytics:

- <http://www.wired.com/2015/01/microsoft-acquires-open-source-data-science-company-revolution-analytics/>

Conferences about R:

useR! 2015 Aalborg, Denmark:

- <http://user2015.math.aau.dk/>

earl2015 London & Boston:

- <http://www.earl-conference.com/>

A journal about R:

- <http://journal.r-project.org/>

Module 1

Introduction to R & RStudio

Key Learning Outcomes

Familiarisation with

- Command Line Computing
- RStudio Integrated Development Environment
- Commands & arguments
- Common Object Classes in R
- Assigning values to Objects
- Saving & Loading R Workspaces
- R Base Graphics
- Data Input

Key Learning Outcomes

The key concepts & mechanics of the plotting with the Grammar of Graphics¹ inspired 'ggplot2':

- the mechanics of the
 `ggplot()`
 command
- the concept of aesthetic mapping
- plotting geometries
- scales
- faceting
- saving plots

¹ Leland Wilkinson, *The Grammar of Graphics*, Statistics and Computing. Springer, 2nd edition, 2005.

Module 3

Linear Modelling in R

Key Learning Outcomes

- read data into R from an external file
- fit linear regression models
- produce & examine model diagnostics
- plot data along with predictions of model and associated uncertainty
- conduct stepwise variable selection
- produce summary statistics for model

Module 4

Programming in R

Key Learning Outcomes

Writing:

- conditional statements
- loops
- functions

Solving problems by writing programs

Module 5

Version Control with Git & GitHub

Key Learning Outcomes

Understand:

- motivations for managing a coding project via a version control system
- fundamentals of Git & GitHub:
 - local and remote repositories
 - developing multiple versions of the same file
 - combining disparate versions of the same file
 - returning to previous version of a file without losing the current version
 - collaboratively editing files

Resources for learning R

Free Courses on R

- <http://www.lynda.com/R-tutorials/R-Statistics-Essential-Training/142447-2.html>
- <https://www.coursera.org/course/rprog>
- <https://www.coursera.org/course/compdata>

Documentation the CRAN Website

Official documentation:

- <http://cran.r-project.org/manuals.html>

Contributed documentation:

- <http://cran.r-project.org/other-docs.html>

Moving Forward

Ideas for Continuing to Learn R

- You could start with using R for graphics...
- A group of you could band together and complete the Coursera course - you could collaborate on the coding exercises via GitHub or BitBucket