Introduction to Data Analysis & Reporting with R

Course Reading List

University of Gothenburg, Department of Political Science

15 & 16 June 2017

Participants are asked to install R (and, optionally, Rstudio) before the course begins. If you are completely new to R (or if it's been a while since you used it and you want a refresher), please also complete the pre-class exercises as well.

Installation of R, the material covered in the pre-class exercises, and a basic familiarity with statistics will be assumed.

Software

R Participants are requested to install R (and, optionally, Rstudio) before the course begins. R is free and open-source software. Instructions for installing the latest release of R can be found online: https://cloud.r-project.org/.

R Editor Most users will want to install Rstudio, a free and open-source R IDE ("integrated development environment").[1] Navigate to www.rstudio.com and follow instructions for your operating system to download the open source version.

Pre-class exercises

Try R Provides a nice introduction to using R. The length of time it takes depends on how familiar you are with R, but it should take no longer than an hour.

Additional resources

None of this is required before the course begins, but all of it is useful:

Ask R

R's built in help system R has built in documentation for nearly everything. If you have a question about a specific function (e.g. `mean`), do `?mean` at the console. You can access the help system for R itself with `help.start()`.

swirl An R package that can teach you R from within R.

Resource of resources

Cookbook for R Covers some solution to common tasks and problems.

CRAN task views CRAN's curated list of packages by topic (e.g. Bayesian, reproducible research, time series, etc)

Stack Overflow - R tag A website where people ask and answer questions with a nice voting system so the best answers appear at the top.

---

[1] If you are already using a text editor like Emacs, Vim, Atom, or Sublime Text, there are also packages that make R work well inside those editors.

Short content

Making High Resolution Graphics for Academic Publishing Great walkthrough of the details on how to produce graphics for publication from R and Stata.

R-bloggers Aggregates different posts from around the web about R. Much isn't relevant for us, but interesting nonetheless. RSS feed here

Rstudio's cheatsheets Great cheatsheets for base R, dplyr functions, ggplot2, and others. If you use Rstudio's IDE the cheatsheet with keyboard shortcuts is particularly useful!

Why R is hard to learn An interesting read, especially once you have used R a bit, and a great reminder that everyone struggles with R at some point. Most people at multiple points!

Data Camp's Introducion to R A (free) online 4 hour tutorial that goes over the basics of R.

Long content

Advanced R If you want to dive into some of the nitty-gritty details of how R things.

R for Data Science An excellent walk through how to do some basic data manipulation in R. Covers a lot of similar materials as this course

Version Control with Git Version control is essentially MS Word's "track changes" feature on steroids. See here and here for why you might want to use it. The most popular tool for this is `git`, and it plays well with R/Rstudio. As an added bonus, it also works well with LaTeX files (answering the "How do I get track changes with LaTeX question that everyone always asks"). You can try git from your browser. Warning: `git` comes with a bit of a learning curve.