What is R?

R is a tool for statistical computing and data visualization. R uses its own programming language, giving the user significant control to manipulate data and create powerful visuals. R's capabilities are virtually limitless because you can add packages that other users have created, as well as the ability to create your own. It provides a free alternative to software like SPSS and STATA, and it is increasingly used in a wide variety of disciplines.

You can use R to organize, visualize, and perform calculations on large datasets. R is exceptionally well-documented with a number of useful resources available, and unofficially supported capabilities are possible via user-defined functions and packages.

How to Install

- Visit http://www.r-project.org/ and click on the hyperlinked text "download R" under the section labeled *Getting Started*.
- Select your preferred mirror. It is recommended that you choose one close to your location.
- Select your platform.

Mac Users:

▪ Select the appropriate .pkg file depending on your version of OS X and download it. If you are unsure of which version you are running, click on the Apple icon in the top left of your desktop and select "About This Mac." Under OS X it will list your version.

Windows Users:

▪ Select "Install R for the First Time" and then "Download R 3.x.x for Windows" (actual version number for R will change as it's updated)

R for Windows

Subdirectories:

base	Binaries for base distribution (managed by Duncan Murdoch). This is what you want to **install R for the first time**.
contrib	Binaries of contributed packages (managed by Uwe Ligges). There is also information on th_____arty software available for CRAN Windows services and corresponding e_____ment and make variables.
Rtools	Tools to build_____ackages (managed by Duncan Murdoch). This is what you want to build_____ckages on Windows, or to build R itself.

Please do not submit binaries to CR_____kage developers might want to contact Duncan Murdoch or Uwe Ligges directly in case of questions_____stions related to Windows binaries.

You may also want to read the R FA_____R for Windows FAQ.

Note: CRAN does some checks on these binaries for viruses, but cannot give guarantees. Use the normal precautions with downloaded executables.

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R-3.2.3 for Windows (32/64 bit)

Download R 3.2.3 for Windows (62 megabytes, 32/64 bit)
Installation and ___her instructions
New features i___s version

If you want to ___ck that the package you have downloaded exactly matches the package distributed by R, you can compare ___sum of the .exe to the true fingerprint. You will need a version of md5sum for windows: both graphical an___nand line versions are available.

Frequently asked questions

- How do I install R when using Windows Vista?
- How do I update packages in my previous version of R?
- Should I run 32-bit or 64-bit R?

Please see the R FAQ for general information about R and the R Windows FAQ for Windows-specific information.

Other builds

- Patches to this release are incorporated in the r-patched snapshot build.
- A build of the development version (which will eventually become the next major release of R) is available in the r-devel snapshot build.

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- Run the .pkg or .exe file and follow the onscreen instructions to complete the installation.
- For troubleshooting or more specific needs, consult the FAQ at http://cran.stat.ucla.edu/

Getting Started with R

One of the downsides of learning R is that there are large "start up" costs. However, there are many resources available to you to learn independently. The short video below can help you get started.

https://youtu.be/LjuXiBjxryQ

SSRMC Workshop

This workshop walks students through the very basics of R, from loading in data to basic data visualization. While the workshop is only taught live once a year, all the resources for the workshop (including videos of Professor Settle teaching it) are available here.

Resources on the Web

The "Try R" tutorial walks you through the syntax of R. Each lesson must be completed before you advance to the next. By the end of the course, you've been exposed to vectors, matrices and data frames in R, as well as basic summary statistics.

Coursera offers a free course that covers basic programming in R, reading data into R, accessing R packages, writing R functions, debugging, profiling R code, and organizing and commenting R code. Coursera recommends that you first take its "Data Scientist's Toolbox" course to introduce you to the concept of turning data into actionable knowledge.

The College also subscribes to Lynda. Lynda's R Statistics Essential Training course starts at the very beginning with loading in data, and then builds to show you how to "model statistical relationships using graphs, calculations, tests, and other analysis tools. Learn how to enter and modify data; create charts, scatter plots, and histograms; examine outliers; calculate correlations; and compute regressions, bivariate associations, and statistics for three or more variables.

UCLA maintains a nice webpage with instructions and examples on using R.

John Quick's R Tutorial Series is another good starting place.

Dr. Chris Fariss also has several good resources on the "Teaching" section of his webpage.

Resources in the SSRMC

There are a variety of printed resources in the SSRMC to help students learn the basics of R, including:

- Art of R Programming by Norman Matloff
- Introduction to Stats with R by Peter Dalgaard
- An R and S-Plus Companion to Applied Regression by John Fox

Example R Code

A quick "cheat sheet of R commands can be found here. One of the most accessible resources for R questions isQuick R. The best way to find example code is to just Google what you are trying to find. There are many resources available. Here are a few we've found:

- A miscellaneous assortment of code for analysis and plotting.
- This website is somewhat geared towards astronomy but it provides some nice example plots as well as some general information about different types of plots with sample code.
- The R graph gallery is a great resource if you have a specific type of plot in mind and want to know what the code looks like.
- A Compendium of Clean Graphs in R is an excellent resource for readable and informative R graphs.

Additional R Resources

- The videos here can help you with specific kinds of analysis you might want to perform on your data.
- R can be extended for further functionality using packages. This blog post details a few useful packages for social scientists.
- The R project is very well documented so it is always a good idea to check there if you have any questions.
- Introductory Statistics with R is another good way to get started with basic statistical analysis using R.