

# Learning R

## Install R

- You can find the most recent version of R at <http://www.r-project.org/>
- The website will require you to choose a “CRAN Mirror”. the idea is to find the location geographically closest to you. Right now the closest option is probably to scroll down to USA and choose the link next to “Statlib, Carnegie Mellon University, Pittsburgh, PA”

## Install Development Environment

The development environment is the application that you will use to open, edit, and execute R programs. If you already have a favorite development environment, you can see if it’s compatible with R (many of them are). If you don’t we recommend one called RStudio.

### Installing RStudio

- You need to have R installed first (see above)
- RStudio can be downloaded from: <http://www.rstudio.com/products/rstudio/download/>
- Select the “installer” link that corresponds to your operating system (e.g. Windows, Mac OSX). Ignore the zip/tarballs & source code sections

## Tutorials

<https://www.datacamp.com/courses/free-introduction-to-r>

DataCamp is a website that provides several courses available to learn R including:

- Introduction to R
- Hands-On Introduction to Statistics with R
- Data Manipulation
- and more.

There is a subscription option, but the “Introduction to R” course and parts of several others are available for free if you create an account (i.e. provide your email address and create a password). You can use the tutorial even if you haven’t installed R yet on your local computer.

Data Camp stops you in between modules to ask if you want to pay for the subscription, but sometimes (like the introduction to R course) you can bypass the subscription and continue for free. There are other tutorials out there, but this one is recommended because it seems to strike a nice balance of simulating real programming in a user-friendly environment for beginners.

## Other Resources for R Help

- R help documentation

- If you know the name of the function you’re trying to use, you can type something like the following into the R console to pull up the associated documentation: **help(read.csv)**
- RStudio also has an embedded help window with a search bar that will pull up the help documentation
- Google searches that say what you are trying to do with “R” or “in R” included in the search terms. Result often includes R help documentation, tutorial webpages, user forums (open this link in Google Chrome for an example: <http://bfy.tw/2be>)
- <http://www.statmethods.net/> - “Quick R” website with menus that you can navigate to browse through topics like Basic Statistics, Data Management, Basic Graphs, Advanced Graphs, etc. Each section includes examples with working code that you can copy and paste to modify for yourself.
- <https://google-styleguide.googlecode.com/svn/trunk/Rguide.xml> - Google’s R style guide. This document gives some pointers on how to write code that other people will be able to understand.
- <http://adv-r.had.co.nz/> - Website which parallels a book called “Advanced R” by Statistics Professor and RStudio Chief Scientist Hadley Wickham. Although it targets a non-beginner audience, there are useful sections for beginners including the following sections:
  - Vocabulary - The basics
  - Style (very similar to Google Style Guide above)
- <https://www.coursera.org/specialization/jhudatascience/1> - Coursera website. Structured online courses in topics such as R programming and other useful skills. These can be taken free of charge, or you can pay to earn a verified certificate upon completion. Courses typically require a commitment of several hours for about 4 weeks.