Week 11 Programming and data analysis in R

Introduction

R is a popular data analysis environment and programming language used in many disciplines, including bioinformatics. In this class, you'll learn the basics of R programming and how to use the R interpreter to analyze data and create data visualizations.

This week, we'll focus on learning R basics, including:

- Creating and working with vectors, matrices, factors, and data frames
- Plotting functions (barplots, scatter plots)
- Computing summary statistics (mean, standard deviation)
- Linear regression, predicting values based on a model

Links and background info

There are countless on-line resources describing R and how to use it. Once you know the basics and how to write your query, it's typically very easy to find links to resources that explain how to do specific tasks in R.

Here are some links to R blog posts, videos, and resources you should review this week and during the next few weeks as you learn to use R in bioinformatics programming.

R-bloggers R news and tutorials contributed by R bloggers. A large community of R users has created multiple short (and longer) posts describing aspects of R. Most posts are short topics such as how you read data from an Excel spreadsheet, how to run R code from other languages, and so on. To see a listing of posts many people have found useful, visit:

- Top 100 most-read R posts of 2012

Flowing Data Web site produced by Nathan Yau, graduate student in statistics at UCLA. The site features tutorials on building data visualizations using plotting functions in R.
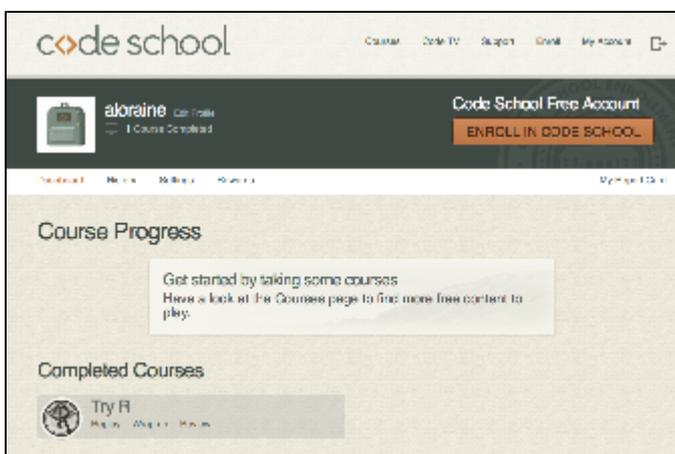
Assignments

Try R Code School

The first assignment is from the Code School, a Web site featuring on-line lessons in programming. You'll do the Code School course titled Try R. The Code School Web site incorporates a simple R interpreter that lets you enter R commands into your Web browser and see the result. Do this assignment first.

Complete all chapters of Code School course Try R Test-drive data visualization in the R

- To turn in the assignment, check in a screen capture from your account.

Introduction to R

The second assignment is similar, but you'll use your own installation of R to run commands and answer questions. Do this assignment after finishing the Code School course.

- To turn in the assignment, check in a plain text document containing answers to each question.

Introduction to R