Hanover Stats Labs

This site is a repository of information related to statistics instruction at Hanover College. Here you will find resources regarding the use of R and RStudio, as well as details about our lab assignments.

This site provides resources for both instructors and students who want to learn how to analyze data with R and RStudio. We have built on the work of Project MOSAIC[1] and tidyverse[2] to offer a small and coherent set of instructions. Our emphasis has been on gradually building the student's ability to analyze data with RStudio and to generate reports using RMarkdown.

Our intent has *not* been to introduce students to the R programming language as a whole. We instead focus on giving students the ability to perform basic statistical work within the R framework while avoiding the true complexity of learning how to code. After working through our materials, students will have become comfortable with the R environment in general, and will be ready for more advanced R work in the future.

New users: We recommend printing out the Basic Cheatsheet[3] and working through the first few labs[4].

Labs Our labs[5] are a great place to start. They gradually introduce you to the various features of R and RStudio. These are the labs we use in our Applied Statistics courses.

Advanced Labs These labs[6] proceed to more advanced topics, including data manipulation, advanced graphing, and advanced linear modeling.

Cheatsheets A Basic Cheatsheet[7] for basic R and RStudio functionality. As you work through the various material, you may want to have a printed copy of the cheatsheet as well as having it open in a browser tab.

We are working on a second, more advanced, cheatsheet as well.

Login Login instructions[8] for those that do not need to follow our labs above. This page has brief information on how to log in to the Hanover College RStudio server. Must have Hanover College login credentials.

R Reference Reference for the various commands[9] we use can be found here. Use it as a reference for enhancing the command's output if the default behavior is not quite what you wanted. We have purposefully restricted ourselves to a small subset of the R language, based on the work of Project MOSAIC[10].

RMarkdown RMarkdown is used to generate reports, like this sample report[11] which was produced from this source file[12].

[1] http://mosaic-web.org/
[2] https://www.tidyverse.org/
[3] cheatSheet.html
[4] labs.html
[5] labs.html
[6] advancedLabs.html
[7] cheatSheet.html
[8] login.html
[9] commands.html
[10] http://mosaic-web.org/
[11] SampleReport.html
[12] SampleReportSource.html

Here is an R Markdown Cheatsheet[13] that describes the markup syntax more.

Other Resources Various resources[14] with further links.

Workshop Resources This page[15] contains useful resources related to the workshops we do on learning R, and might be more broadly useful to others.

Installation Instructions[16] for how to set up RStudio and related packages on your own machines.

[13] https://www.rstudio.com/wp-content/uploads/2015/02/rmarkdown-cheatsheet.pdf
[14] various.html
[15] workshopResources.html
[16] installation.html