Resources Related to the `mosaic` Package

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1 Introduction

This vignette describes related resources and materials useful for teaching statistics with a focus on modeling and computation.

2 Package Vignettes

The `mosaic` package includes a number of vignettes:

- a minimal set of R commands for use in Introductory Statistics and why it is important to keep the set of commands small (http://cran.r-project.org/web/packages/mosaic/vignettes/V1MinimalR.pdf);
- strategies for teaching statistics using R (http://cran.r-project.org/web/packages/mosaic/vignettes/V2StartTeaching.pdf);
- the R commands needed for all the basic statistical procedures in an Intro Stats course (http://cran.r-project.org/web/packages/mosaic/vignettes/V3Commands.pdf);

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- modeling in R (http://cran.r-project.org/web/packages/mosaic/vignettes/V4Modeling.pdf);
- resampling methods in R (http://cran.r-project.org/web/packages/mosaic/vignettes/V5Resample.pdf); and
- using R in calculus (http://cran.r-project.org/web/packages/mosaic/vignettes/V6Calculus.pdf).

3 Textbook Related

Statistical Modeling: A Fresh Approach **(DT Kaplan, second edition** is an introduction to statistics embracing a modeling approach and employing resampling methods. The mosaic package is used throughout (http://www.mosaic-web.org/StatisticalModeling).

Foundations and Applications of Statistics: An Introduction Using R¡/a¿ **(R Pruim)** is an R-infused probability and mathematical statistics text that emphasizes connections between probability and statistics. The book predates the mosaic package, much of the code originally in the fastR package has been moved into the mosaic package http://www.ams.org/publications/authors/books/postpub/amstext-13).

The Statistical Sleuth in R **(NJ Horton)** available at http://www.amherst.edu/~nhorton/sleuth describes how to undertake analyses in R for the examples in the first 13 chapters of the Third Edition of the *Statistical Sleuth: A Course in Methods of Data Analysis* (2013), the excellent text by Fred Ramsey and Dan Schafer.

Introduction to the Practice of Statistics in R **(NJ Horton)** available at http://www.amherst.edu/~nhorton/ips6e, describes how to undertake analyses in R that are introduced as examples in the first chapters of the Sixth Edition of *Introduction to the Practice of Statistics* (2007), the excellent text by David Moore, George McCabe, and Bruce Craig.

Statistics: Unlocking the Power of Data **(Lock, Lock, Lock, Lock, and Lock)** is a introductory statistics textbook that embraces a resampling approach. Additional information about the book and the approach used there can be found at http://lock5stat.com An annotated companion to the examples in the book implemented using R can be found at https://github.com/rpruim/Lock5withR/blob/master/Lock5withR.pdf.

4 Articles

- GW Cobb, The introductory statistics course: a Ptolemaic curriculum?, *Technology Innovations in Statistics Education*, 2007, 1(1), www.escholarship.org/uc/item/6hb3k0nz.
- D Nolan and D Temple Lang, Computing in the statistics curricula, *The American Statistician*, 2010, 64(2), www.stat.berkeley.edu/~statcur/Preprints/ComputingCurric3.pdf.