

Resources Related to the `mosaic` Package

Daniel Kaplan*
Macalester College
St. Paul, MN

Nicholas J. Horton†
Amherst College
Amherst, MA

Randall Pruim‡
Calvin College
Grand Rapids, MI

August 22, 2014

Contents

1	Introduction	1
2	Package Vignettes	1
3	Textbook Related	2
4	Articles	2

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>);

*dtkaplan@gmail.com

†nhorton@amherst.edu

‡rpruim@calvin.edu

- 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>).
- Less Volume, More Creativity, slides from an ICOTS 2014 presentation introducing the mosaic package and related tools. (<http://cran.r-project.org/web/packages/mosaic/vignettes/LessVolume-MoreCreativity.Rhtml>).

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 (R Pruim) is an R-infused probability and mathematical statistics text that emphasizes connections between probability and statistics. The book predates the **mosaic** package, but 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), <http://www.escholarship.org/uc/item/6hb3k0nz>.
- D Nolan and D Temple Lang, Computing in the statistics curricula, *The American Statistician*, 2010, 64(2), <http://www.stat.berkeley.edu/~statcur/Preprints/ComputingCurric3.pdf>.