The gregmisc package: something for everyone

by Gregory R. Warnes

The gregmisc package is a repository for functions that I find myself needing but that don't seem to be available somewhere else. In contrast to many packages, it is not organized thematically, rather it contains a hodge-podge of different routines that make my life a little easer.

I've taken the time to bundle these functions up as a package for three reasons, first to share my efforts with others, second to get feedback (particularly bug reports and feature enhancements), and third to force myself to properly document and test the code.

The function in the gregmisc library fall into six general areas: permutations and combinations, tools for linear models, plots, data manipulation, fixed or extended versions of existing functions, and other.

1. permutation and combinations

   combinations Enumerate the combinations of the elements of a vector

   permutations Enumerate the permutations of the elements of a vector

   factorial Compute the factorial function

2. tools for linear models

   ci Compute confidence intervals

   contrast.lm Compute (and test) arbitrary single-term contrasts for regression objects

   estimable Compute and test estimable linear functions of the fitted coefficients (including contrasts) of regression objects

   glh.test Test a general linear hypothesis for regression objects

3. plots

   boxplot.n Produce a boxplot annotated with the number of observations

   plotCI Plot error bars

   plotmeans Plot group means and confidence intervals

   wapply Compute the value of a function over a local region of an x-y plot

   space Deterministically space points in an x-y plot so they don't overlap.

   hist2d Create and Plot a 2-dimensional histogram.

   bandplot Plot x-y points with locally smoothed mean and standard deviation

4. data manipulation

   combine Combine R objects (such as dataframes) and add an additional column labeling the source

   rename.vars Rename variables in a dataframe

5. fixed or extended versions of current functions

   lowess Extend built-in `lowess` function to handle model formulae

   plot.lm Extend the built-in `plot.lm` function:
   - residual plots: add rug, zero line, mean and 1-sigma smooths
   - residual quantile plots: add `qqline`
   - add plots of each predictor against the residuals.

6. other

   running Apply a function over adjacent subsets of a vector

I welcome comments and contributions. The current package includes code by Ben Bolker, Bendix Carstensen, Don MacQueen, and William Venables.

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