Design Principles, Comparisons and Limitations

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This document briefly describes the design of huxtable, and compares it with other R packages for creating tables. A current version is on the web in HTML or PDF formats.

Design principles

I wrote this package because I wanted a simple way to create tables in my LaTeX documents. At the same time, I wanted to be able to output HTML or Markdown for use in RStudio. And, I wanted to be able to edit tables intuitively using standard R features. My typical use case is creating tables of regression outputs, but I also wanted to be able to represent arbitrary data, like a table of descriptive statistics or of plain text.

The idea behind huxtable is to store data in a normal data frame, along with properties that describe how to display the data, at cell, column, row or table level. Operations on the data frame work as normal, and they also affect the display properties. Then, the data can be output in an appropriate format. At the moment, those formats are LaTeX, HTML, Markdown, Word/Excel/Powerpoint, RTF and on-screen pretty printing. More could be added.

Another design choice was to have separate functions per feature. Many existing packages use a single function with a large number of options. For instance, `print.xtable` in the `xtable` package has 34 options, and `texreg` in the `texreg` package has 41. Having one function per feature should make life easier for the end user. It should also lead to clearer code: each function starts with a valid huxtable, changes one thing, and returns a valid huxtable.

The output formats are very different, and decisions have to be made as to what any package will support. My background is more in HTML. This is reflected in some of the huxtable properties, like per-cell borders and padding. The package tries to keep output reasonably similar between LaTeX and HTML, but there are inevitably some differences and limitations (see below). For Markdown and on-screen output, obviously, only a few basic properties are supported.

The package makes no attempt to output beautiful HTML or LaTeX source code. In fact, in the case of LaTeX, it's pretty ugly. The approach is "do what it takes to get the job done".

Comparing Huxtable With Other Packages

R has many different packages to create LaTeX and HTML tables. The table(s) below list those I know and the features they have. The table is produced with huxtable, of course ;-)