

Using kableExtra in Bookdown

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Contents

1	Introduction	5
2	Cross-format Tables in Bookdown	7
2.1	Use the “K-M” approach instead of “M-K”	7
2.2	Prepare Your Tables for All Formats	7
3	Use Bootstrap Tables in gitbooks & epub	9
3.1	Gitbook	9
3.2	Epub	10

Chapter 1

Introduction

If you have tried to use `kableExtra` in a `bookdown` project with multiple formats, you may have experienced some problems. For example, you might not be able to render HTML and PDF tables at the same time using the same piece of code. At the same time, you might start to wonder if it's possible to create `bootstrap` style tables in `gitbook`. I will try to address these issues using this example.

This book is hosted at <https://haozhu233.github.io/kableExtra/bookdown/index.html>

You can download PDF & EPUB to see the results of `kableExtra` in those formats using the same code.

You can find the source code for this project at <https://github.com/haozhu233/kableExtra/tree/master/docs>.

Chapter 2

Cross-format Tables in Bookdown

Note that if `kableExtra` 0.9.0 doesn't support the EPUB format. If you need to output tables in `.epub`, please upgrade to the dev version or version 1.0 on CRAN once it's released.

2.1 Use the “K-M” approach instead of “M-K”

Please read this chapter about the “K-M”/“M-K” approaches in `bookdown`: <https://bookdown.org/yihui/bookdown/new-session.html>

To generate cross-format tables with `kableExtra` in a multi-format bookdown project, you will have to use the “M-K” approach by setting `new_session: true` in `_bookdown.yml`. Somehow the “M-K” approach, which merges chapters to a big Rmd and then renders, shares the global environment across formats. For now, I'm not sure if this is a bug or intended behavior. It might be fixable in the future but please don't count on that. By setting `new_session: true`, we force R to use a new session for every chapter for different formats. In this way, tables are generated differently in different formats.

Note that the “M-K” approach is slower than the “K-M” approach. At the same time, packages and data are not shared across chapter.

```
# Example _bookdown.yml
book_filename: "bookdown_example"
delete_merged_file: true
new_session: true
language:
  ui:
    chapter_name: "Chapter "
```

2.2 Prepare Your Tables for All Formats

In most cases, functions in `kable` and `kableExtra` use the same API to accomplish the same styling task in HTML and LaTeX. However, you also need some format specific settings so your tables will look good in both formats. Some common items here include the `booktabs` and `longtable` settings in `kable` and the `bootstrap_options` and `latex_options` in `kable_styling`.

Here is an example for a table that will work in HTML, LaTeX & EPUB.

```
library(kableExtra)
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 3.5.1
##
## Attaching package: 'dplyr'
## The following objects are masked from 'package:stats':
##
##   filter, lag
## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union
options(kableExtra.html.bsTable = T)
iris[1:10, ] %>%
  mutate_if(is.numeric, function(x) {
    cell_spec(x, bold = T,
              color = spec_color(x, end = 0.9),
              font_size = spec_font_size(x))
  }) %>%
  mutate(Species = cell_spec(
    Species, color = "white", bold = T,
    background = spec_color(1:10, end = 0.9,
                             option = "A", direction = -1)
  )) %>%
  kable(escape = F, align = "c", booktabs = T) %>%
  kable_styling(c("striped", "condensed"),
               latex_options = "striped",
               full_width = F)
```

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa
4.6	3.4	1.4	0.3	setosa
5	3.4	1.5	0.2	setosa
4.4	2.9	1.4	0.2	setosa
4.9	3.1	1.5	0.1	setosa

Chapter 3

Use Bootstrap Tables in gitbooks & epub

3.1 Gitbook

Most of `kableExtra` tricks will work in `bookdown` except those requiring `bootstrap`. By default, `rmarkdown` won't load `bootstrap` for you on gitbook as it's not necessary. In `kableExtra`, I used the `bootstrap 3.3.7` customization tool and made a customized `css` copy. You can load it by setting `options(kableExtra.html.bsTable = T)`.

```
library(kableExtra)
options(kableExtra.html.bsTable = T)

mtcars[1:5, 1:5] %>%
  kable(booktabs = T) %>%
  kable_styling(
    bootstrap_options = c("striped", "hover", "bordered", "condensed"),
    latex_options = c("striped")
  ) %>%
  column_spec(1, color = "red") %>%
  add_header_above(c(" ", "Group A" = 2, "Group B" = 3))
```

	Group A		Group B		
	mpg	cyl	disp	hp	drat
Mazda RX4	21.0	6	160	110	3.90
Mazda RX4 Wag	21.0	6	160	110	3.90
Datsun 710	22.8	4	108	93	3.85
Hornet 4 Drive	21.4	6	258	110	3.08
Hornet Sportabout	18.7	8	360	175	3.15

One very important note here is that by default `bookdown` loads the `gitbook` table `css` on start up. It has some conflicts with `bootstrap` tables. As a result, some features like `hover` won't be able to work by default. To solve this problem, you need to use the latest version of `bookdown` (version `>= 0.7.21`) and turn off the `table_css` option under `bookdown::gitbook` in `_output.yml`

```
bookdown::gitbook:
```

```
table_css: false
```

3.2 Epub

Right now, it's impossible to load addition CSS through HTML dependency and this mechanism exists for a reason (See this issue I filed). You will have to manually load this stylesheet by putting it to a CSS file (such as “style.css”) and load it in `_output.yml`. For example,

```
bookdown::epub_book:  
  stylesheet: style.css
```