

# DSFBA: Visualization

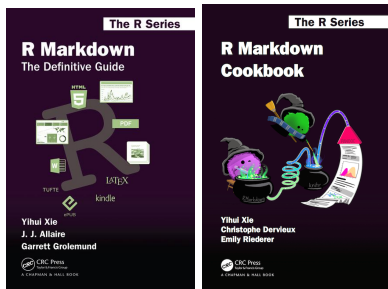
*Data Science for Business Analytics*

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11/24/2021

- R markdown presentations and dashboards.
- Interactivity



- Two books:
  - ▶ The definitive guide
  - ▶ The cookbook (more practical and relatively short examples)
- Include:
  - ▶ Example applications
  - ▶ Cheatsheets
  - ▶ Syntax
  - ▶ Other languages
  - ▶ Interactive documents
  - ▶ Output formats
  - ▶ Extensions
  - ▶ And more9

```
mpg %>% select(year:drv) %>%  
  head()  
#> # A tibble: 6 x 4  
#>   year   cyl trans      drv  
#>   <int> <int> <chr>   <chr>  
#> 1  1999     4 auto(l5)   f  
#> 2  1999     4 manual(m5) f  
#> 3  2008     4 manual(m6) f  
#> 4  2008     4 auto(av)   f  
#> 5  1999     6 auto(l5)   f  
#> 6  1999     6 manual(m5) f
```

```
mpg %>% select(year:drv) %>%  
  head() %>% kable()
```

year	cyl	trans	drv
1999	4	auto(l5)	f
1999	4	manual(m5)	f
2008	4	manual(m6)	f
2008	4	auto(av)	f
1999	6	auto(l5)	f
1999	6	manual(m5)	f

- Dedicated chapter in the cookbook
- **kableExtra** for more options!

- R Markdown to produce presentations:
  - ▶ Less visual control than with Keynote/PowerPoint.
  - ▶ But automatically inserting the R code results saves huge amounts of time.
- Presentations work by dividing your content into slides:
  - ▶ New slide beginning at each first (#) or second (##) level header.
  - ▶ Horizontal rule (----) for a slide without header.
- More in the dedicated chapter of the Rmarkdown book

Three presentations formats built-in:

1. `beamer_presentation` - PDF presentation with LaTeX Beamer.
2. `ioslides_presentation` - HTML presentation with ioslides.
3. `slidy_presentation` - HTML presentation with W3C Slidy.

Other formats are provided by packages:

4. `revealjs::revealjs_presentation` - HTML presentation with revealjs
5. `rmdshower::shower_presentation` is a wrapper around `shower`
6. `xaringan::moon_reader` - based on based on the JavaScript library `remark.js`

- Useful to communicate large amounts of information visually and quickly.
- E.g., at-a-glance views of KPIs relevant to a particular objective/business process.

## flexdashboard:

- Each level 1 header (#) begins a new page in the dashboard.
- Each level 2 header (##) begins a new column.
- Each level 3 header (###) begins a new row.
- Similarly simple tools for creating sidebars, tabsets, value boxes, gauges, etc.

Any HTML format can contain interactive components:

- [htmlwidgets](#) are R packages/functions for interactive HTML visualisations.
- No knowledge of HTML or JavaScript needed to use them.
- Details are wrapped inside the package, so no need to worry about it.

Packages that provide [htmlwidgets](#):

- [DT](#) for interactive tables.
- [leaflet](#) for interactive maps.
- [dygraphs](#) for interactive time series visualisations.
- [threejs](#) for interactive 3d plots.
- ... and many more!