

Upping your R Markdown game

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Tables

Tables

- Tables are always a bit of a pain...
- By default, R Markdown prints out tables the same way R does, which is not that pretty
- Quick fix: `knitr::kable()`
- Another quick fix, especially for printing out the entire data frame is `DT::datatable()`

Your turn

- Open `Economist.Rmd`, knit, and review the `datatable()` output
- Update this output such that
 - Variables have nice, user-friendly names. (Your choice)
 - Only 5 observations are shown on each page
 - Searching functionality is turned off
 - Dropdown menu for how many observations to show is 5, 10, and 50
- The following two resources might be useful:
 - DataTables reference: <https://datatables.net/reference/option/>
 - dtable package reference: <https://rstudio.github.io/DT/>



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Other table-making packages

We're not going to go through these in detail but they're good to have on your radar:

- `kableExtra`
- `xtable`
- `stargazer`
- `pander`
- `tables`
- `ascii`

What kind of output does `kable()` create?

1. In your console, type `kable(head(mtcars))`.
2. Try an optional argument, e.g. `format = "html"`
or `format = "latex"`
3. What about `datatable()`? Is it suited to printed output?



Parametrized reports

(aka first dip into interactivity)



Parametrized reports

- Parameters are useful when you want to re-render the same report with distinct values for various key inputs, for example:
 - Running a report specific to a department or geographic region
 - Running a report that covers a specific period in time
 - Running multiple versions of a report for distinct sets of core assumptions
- Declare parameter name, type, and default value in the YAML
- Change parameter values by passing to the `rmarkdown::render` function

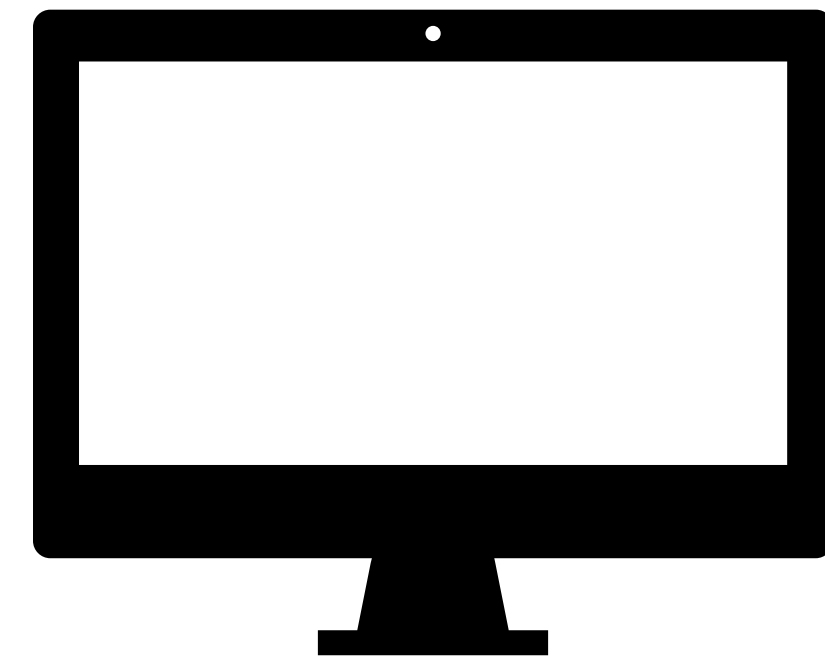
Economist.Rmd

OPTION 1

```
rmarkdown::render("Economist.Rmd",  
  params = list(year = 2015))
```

OPTION 2

```
rmarkdown::render("Economist.Rmd", params = "ask")
```



DEMO



Your turn

- Add another parameter to the YAML of `Economist.Rmd` to specify which month to limit the display to.
- Make the appropriate adjustments to the R code in the document to take into account this new variable. (Note also that the year appears in the text of the document. Synchronize this to match the parameter.
- Render the document with this parameter in place, using
 - the knit button
 - `rmarkdown::render("Economist.Rmd", params = list(whatever))`

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Bibliography and citation

List references in YAML

references:

```
- id: Kaggle18
  title: Burritos in San Diego
  author:
    - family: Cole
      given: Scott
  URL: 'https://www.kaggle.com/srcole/burritos-in-san-diego'
  type: article
  issued:
    year: 2018
    month: 1
```



Use bibliography file

- You can specify a bibliography file using the `bibliography` field in the YAML
- This can be a .bib file, or take on a variety of other formats:

Format	File extension
MODS	.mods
BibLaTeX	.bib
BibTeX	.bibtex
RIS	.ris
EndNote	.enl
EndNote XML	.xml
ISI	.wos
MEDLINE	.medline
Copac	.copac
JSON citeproc	.json

Source: http://rmarkdown.rstudio.com/authoring_bibliographies_and_citations.html



Citation syntax

- Each citation must have a key, composed of @ + the citation identifier from the database
- Two styles:
 - [@Kaggle18]: (Cole 2018)
 - @Kaggle18: Cole (2018)
- Separate multiple citations with semicolons

Your turn

- Add a reference to the `rmarkdown` package in the `bibliography.bib` file.
 - Hint: see the `utils::citations()` function
- Add a citation to it in the `Economist.Rmd` file.
- Knit the document to confirm the citation appears as expected.



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Templates

Templates

- We have already used some templates (xaringan and tufte)
- Many other packages come with similar templates
- Templates can also be useful for teaching purposes
- The `rticles` package is a rich source of templates for authoring scientific articles for various journals

Your turn

- **Before you start:** Make sure the rarticles package is installed and loaded.
- Go to New File ➡ R Markdown... ➡ From Template, and then choose the template for the R Journal (unless another journal's name catches your eye)
- Knit the document without any changes to observe the look and the pieces of metadata you would need to fill in to make it your own.



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