

Habits

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Overview



.Rmd files

An R Markdown (.Rmd) file is a record of your research. It contains the code that a scientist needs to reproduce your work along with the narration that a reader needs to understand your work.



Reproducible Research

At the click of a button, or the type of a command, you can rerun the code in an R Markdown file to reproduce your work and export the results as a finished report.



Dynamic Documents

You can choose to export the finished report as a html, pdf, MS Word, ODT, RTF, or markdown document; or as a html or pdf based slide show.

Breakfast

Workflow

-
- 1 Open a new .Rmd file** at File ► New File ► Markdown. Use the wizard that opens to pre-populate the file with a template
- 2 Write document** by editing template
- 3 Knit document to create report** Use knit button or **render()** to knit
- 4 Preview Output** in IDE window
- 5 Publish** (optional) to web or server
- Sync publish button to accounts at
 - rpubs.com
 - shinyapps.io
 - RStudio Connect
 - Reload document
 - Find in document
 - File path to output document

.Rmd structure

YAML Header

Optional section of
render (e.g. pandoc)
options written as
key:value pairs (YAML).

Text

Narration formatted with
markdown, mixed with:

Code chunks

Chunks of embedded code. Each chunk:

- Begins with $\text{''}\{r\}$
- ends with ''

R Markdown will run the code and append the results to the doc.

It will use the location of the .Rmd file as the **working directory**

| | | | | |
|---------------------------------------|-------------------------|-------------------|-------------------|-------------------|
| Set preview location | Insert code chunk | Go to code chunk | Run code chunk(s) | Run current chunk |
| <pre>de=FALSE} set(echo = TRUE)</pre> | | | | |
| Modify chunk options | Run all previous chunks | Run current chunk | | |

R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents.

```
summary(cars)
```

| ## | speed | dist |
|----|--------------|----------------|
| ## | Min : 4.0 | Min. : 2.00 |
| ## | 1st Qu.:12.0 | 1st Qu.: 26.00 |
| ## | Median :15.0 | Median : 36.00 |
| ## | Mean :15.4 | Mean : 42.98 |
| ## | 3rd Qu.:19.0 | 3rd Qu.: 56.00 |
| ## | Max. :25.0 | Max. :120.00 |

For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

render()

Use `rmarkdown::render()` to render/knit at cmd line.
Important args:

input - file to render

output format

output_options - List of

output_options - List of render options (as in YAML)

output file

output_dir

params - list of params to use

params - list of params to provide as arguments

envir - environment to evaluate code chunks in

evaluating code chunks in
`getOption("fig.ext")`

encoding - of input file

Citations + Google Scholar

Set up Google Scholar, part 1

Set up Google Scholar so that it shows your BibTeX formatting for each citation This assumes that you have a Google account

Set up Google Scholar, part 2

Example - Addition Citations to your .bib

- ▶ Now we can look up articles on Google Scholar and *copy and paste* the BibTex citation to my “bibliography.bib” file
- ▶ Rarely do I have to write the BibTex citation from scratch

Why Use R Markdown for your Citations/Bibliography?

- ▶ formats citations according to format of your choosing
- ▶ compiles bibliography for you
- ▶ when you re-compile your R Markdown document, the bibliography will be recreated as well – ensures that bibliography is up-to-date – no extras, no missing references

Other Benefits of Using R Markdown

Tables

Tables and Figures

- ▶ R Markdown numbers the tables and figures for you so you do not have to!

R Markdown Vs. Microsoft Word

Pros of R Markdown

- ▶ incorporate code directly into your document
- ▶ you can hide text that you are ready to delete!

Cons of R Markdown

- ▶ track changes - not as easy to implement changes when you have to do it in R Markdown ~~##~~ Bookdown Dissertation!

<https://github.com/ksauby/thesisdownufl>

Resources

<https://rmarkdown.rstudio.com/index.html>

<https://bookdown.org/yihui/rmarkdown/>

where to find csIs