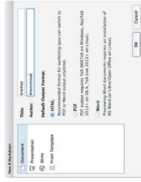


R Markdown :: CHEAT SHEET

What is R Markdown?

- 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 in a variety of formats, including html, pdf, MS Word, or RTF documents; html or pdf based slides, Notebooks, and more.

Workflow



- Open a new .Rmd file** at File ► New File ► R Markdown. Use the wizard that opens to pre-populate the file with a template
- Write document** by editing template
- Knit document to create report**; use knit button or `render()` to knit
- Preview Output** in IDE window
- Publish** (optional) to web server
- Examine build log** in R Markdown console
- Use output file** that is saved along side .Rmd

Embed code with knitr syntax

INLINE CODE
Insert with `"r"<code>`. Results appear as text without code.

Built with `"r"<getVersion()>` ➔ Built with 3.2.3

```
## 1.1 3.2.3*
getVersion()
```

IMPORTANT CHUNK OPTIONS

- cache** - cache results for future knits (default = FALSE)
- cache.path** - directory to save cached results in (default = "cache/")
- child** - file(s) to knit and then include (default = NULL)
- collapse** - collapse all output into single block (default = FALSE)
- comment** - prefix for each line of results (default = "#")

- dependencies** - chunk dependencies for caching (default = NULL)
- engine** - Display code in output document (default = TRUE)
- engine** - code language used in chunk (default = "R")
- error** - Display error messages in doc (TRUE) or stop render when errors occur (FALSE) (default = FALSE)
- eval** - Run code in chunk (default = TRUE)

Options not listed above: R options, `anipopts`, `autodep`, `background`, `cache.comments`, `cache.lazy`, `cache.rebuild`, `cache.vars`, `dev`, `dev.args`, `dpi`, `engine.opts`, `engine.path`, `fig.keep`, `fig.env`, `fig.height`, `fig.ip`, `fig.path`, `fig.pos`, `fig.process`, `fig.retina`, `fig.scap`, `fig.show`, `fig.showtext`, `fig.subcap`, `interval`, `out.extra`, `out.height`, `out.width`, `prompt`, `purrr`, `reliabel`, `render`, `size`, `split`, `tidy.opts`

- fig.align** - 'left', 'right', or 'center' (default = default)
- fig.cap** - figure caption as character string (default = NULL)
- fig.height**, **fig.width** - Dimensions of plots in inches
- highlight** - highlight source code (default = TRUE)
- include** - Include chunk in doc after running (default = TRUE)

- message** - display code messages in document (default = TRUE)
- results** (default = 'markup')
 - 'asis' - passthrough results
 - 'hide' - do not display results
 - 'hold' - put all results below all code
- tidy** - tidy code for display (default = FALSE)
- warning** - display code warnings in document (default = TRUE)

Options not listed above: R options, `anipopts`, `autodep`, `background`, `cache.comments`, `cache.lazy`, `cache.rebuild`, `cache.vars`, `dev`, `dev.args`, `dpi`, `engine.opts`, `engine.path`, `fig.keep`, `fig.env`, `fig.height`, `fig.ip`, `fig.path`, `fig.pos`, `fig.process`, `fig.retina`, `fig.scap`, `fig.show`, `fig.showtext`, `fig.subcap`, `interval`, `out.extra`, `out.height`, `out.width`, `prompt`, `purrr`, `reliabel`, `render`, `size`, `split`, `tidy.opts`

R Studio

.rmd Structure

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

At start of file

Text
Narration formatted with markdown, mixed with:

Code Chunks
Chunks of embedded code. Each chunk:

Begins with ````{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**

Parameters

Parameterize your documents to reuse with different inputs (e.g., data, values, etc.)

- Add parameters** - Create and set parameters in the header as sub-values of params
 - params:
 - n: 100
 - d: lr Sys.Date()
- Call parameters** - Call parameter values in code as `params$<name>`
- Set parameters** - Set values with Knit with parameters or the params argument of render:
 - render("doc.Rmd", params = list(n = 1, d = as.Date("2015-01-01")))

Interactive Documents

Turn your report into an interactive Shiny document in 4 steps

- Add runtime: shiny to the YAML header.
- Call Shiny input functions to embed input objects.
- Call Shiny render functions to embed reactive output.
- Render with `rmarkdown::run` or click Run Document in RStudio IDE

output: html_document
runtime: shiny

```{r, echo = FALSE}  
numericInput("n",  
 "How many cars?", 5)  
renderTable({  
 head(cars, input\$n)  
})  
```

How many cars?
5

| speed | dist |
|--------|-------|
| 1 4.00 | 2.00 |
| 2 4.00 | 10.00 |
| 3 7.00 | 4.00 |
| 4 7.00 | 22.00 |
| 5 8.00 | 16.00 |

Embed a complete app into your document with shiny: `shinyAppDir()`

NOTE: Your report will be rendered as a Shiny app, which means you must choose an html output format, like `html_document`, and serve it with an active R Session.