My very own Rmarkdown cheat sheet

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Abstract

Place holder

1 Introduction

Here live several examples on how to write stuff in Rmarkdown, with no apparent organisation. They are here to help you write a paper using only Rmarkdown and discard every other software away.

1.1 Smaller headlines

There are 4 in total, just add more "#"

1.1.1 Three dash headline

1.1.1.1 The smallest headline

2 Specific text

Microsoft uses buttons, LateX uses functions and Rmarkdown uses symbol shortcut to write specific text:

I write in italic using * around the expression (_ works too)

Bold is a possibility too using **

`In text code` such as a `variable` or a `function()` is done using ‘

Subscripts uses ~ and superscripts ^, e.g. H~3~PO^2+^ renders H_3PO^{2+}

And when you want to use any of these symbols verbatim, one needs to add “\” in front

#, *, ‘

2.1 Highlighting

write block quotes using >

however the style appears only in HTML

There is a workaround using a LateX function:

> quote in a pdf

But you need an associated .tex file which is then given to the YAML

2.2 List of items

1. one (done using 1.)
2. two

- not marked using *
- more not marked
  - nested adding +
    * doubling down

2.3 Others

Rmarkdown can also handle LateX functions such as “\newpage”

3 Math symbols

Mathematics are done using the $ symbol around the expression. It can be used in line $X = Y + 1$ or separate and centered using $$

$$\alpha = e^{\beta}$$

Specific letters such as α (written α) must be written in the math environment. The syntax is the same as LateX and can be found on https://www.overleaf.com/learn/latex/List_of_Greek_letters_and_math_symbols

4 Citations

Citation are handled using a .bib file, generated by your favorite reference manager (Rmarkdown not doing yet unfortunately) Add the file path to the YAML at the head of the document (bibliography: myLibrary.bib)

In text citations are done using @ and using the unique code linking to your reference. In my case it looks like "firstAuthor_firstWord_year" but it is user dependent.

(Andersen 2019) = [@andersen_fish_2019]

(Andersen 2019; Blanchard et al. 2014) = [@andersen_fish_2019; @blanchard_evaluating_2014]

Blanchard et al. (2014) = @blanchard_evaluating_2014

(See Andersen 2019 for details.) = [See @andersen_fish_2019 for details.]

The style of the citations is often journal specific. Fortunately, journals provide .csl files of their own styling, which can be found on https://www.zotero.org/styles. Dowload the file and give the path to Rmarkdown in the YAML using "csl: myStyle.csl"

References will be added at the end of the document. Just add a "#References" at the end.

5 Inserting code blocks

Ctrl + Alt + i is the shortcut to insert a code chunk. Useful options are

echo: if TRUE, display code chunk

eval: if TRUE, run the chunk

include: if TRUE, include chunk in doc

message: if TRUE, display code messages

warning: if TRUE, display code warnings

6 Figures

Figures are added using ! [caption] (filePath.jpg)

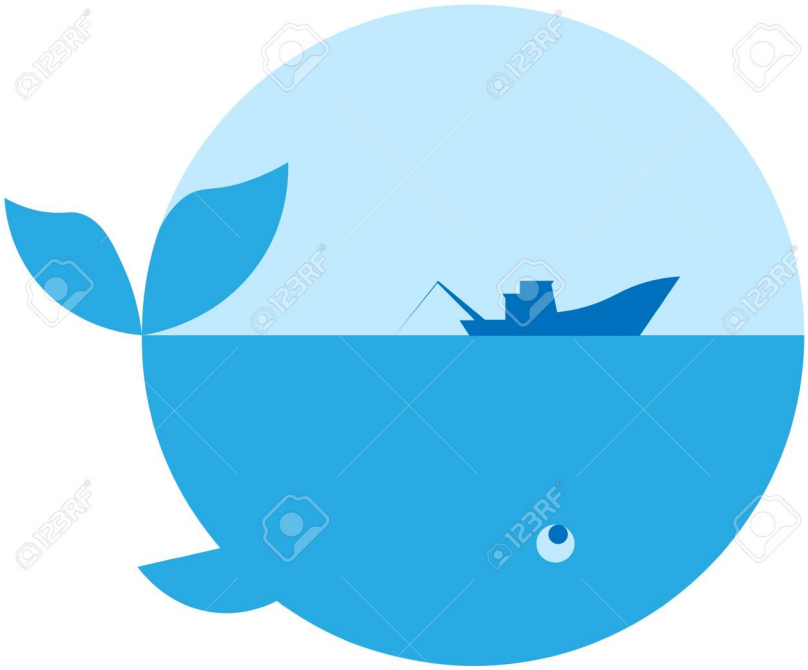

Figure 1: Caption about George

For more control over the figure, one can use `knitr::include_graphics()`

7 Tables

Tables such as data frame are easily displayed using `knitr::kable()`

```
knitr::kable(head(mtcars))
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225	105	2.76	3.460	20.22	1	0	3	1

It's so simple that it's easier to create a data frame first to make a table, than to make a table directly.

Table 1: parameters' description

parameter	description
w_inf	asymptotic weigth
w_mat	maturation weight
beta	preferred predator/prey mass ratio

```
param_description <- data.frame("parameter" = c("w_inf","w_mat","beta"),
                                "description" = c("asymptotic weigth",
                                                  "maturation weight",
                                                  "preferred predator/prey mass ratio")
)
```

```
knitr::kable(param_description, caption = "parameters' description")
```

8 The neat stuff

8.1 Auto-numbering and cross-referencing

This is done using the R package `bookdown`.

```
library(bookdown)
```

```
plot(mtcars$mpg,mtcars$cyl)
```

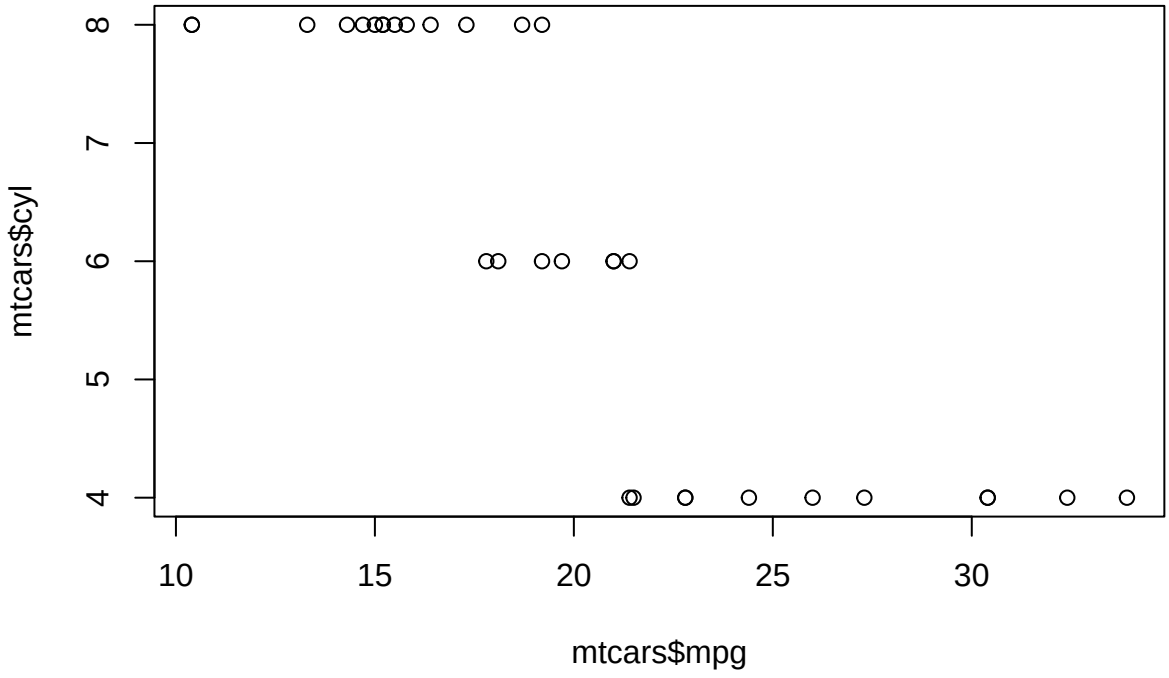

Figure 2: a plot about cars' cylinders

Figure 2 is rad. Table 1 is not bad either.

This reference is done automatically using \ @ ref(label), where label is the name of the code-chunk referenced with its float identity, i.e the previous figure's label is `fig:cars` and the table's label is `tab:params`

8.2 Using variables in text

```
head(mtcars)
```

```
##                    mpg cyl disp  hp drat    wt  qsec vs am gear carb
## Mazda RX4         21.0   6  160 110 3.90 2.620 16.46  0  1    4    4
## Mazda RX4 Wag     21.0   6  160 110 3.90 2.875 17.02  0  1    4    4
## Datsun 710        22.8   4  108  93 3.85 2.320 18.61  1  1    4    1
## Hornet 4 Drive    21.4   6  258 110 3.08 3.215 19.44  1  0    3    1
## Hornet Sportabout 18.7   8  360 175 3.15 3.440 17.02  0  0    3    2
## Valiant           18.1   6  225 105 2.76 3.460 20.22  1  0    3    1
```

The number of cylinders of Mazda RX4 is 6. The previous sentence verbatim is actually:

The number of cylinders of “r rownames(mtcars)[1]” is “r mtcars[1,2]” (just need to replace " with ’)

8.3 Remember to checkout the YAML

other stuff?

9 Cheat sheets

https://www.markdownguide.org/cheat-sheet

https://bookdown.org/yihui/rmarkdown-cookbook/basics.html

References

Andersen, Ken H. 2019. *Fish Ecology, Evolution, and Exploitation A New Theoretical Synthesis*. Princeton University Press.

Blanchard, Julia L., Ken H. Andersen, Finlay Scott, Niels T. Hintzen, Gerjan Piet, and Simon Jennings. 2014. "Evaluating Targets and Trade-Offs Among Fisheries and Conservation Objectives Using a Multispecies Size Spectrum Model." Edited by Andre Punt. *Journal of Applied Ecology* 51 (3): 612–22. https://doi.org/10.1111/1365-2664.12238.