Brief Tutorial on Documentation in R

Contents

A # followed by text becomes your title!

1 Brief tutorial on R Manrkdown

Optional YAML metadata resides between two tripple dashes: ---

Section begins by two hashes: ##

1.1 Section 1

This is goign to be a first document.

How do we include an R code in this doc? Well just press: Ctrl-Alt-I and a code separator (three back ticks: “‘) will appear!

```
require(dplyr);
ns = dplyr::nasa;
ns = as.data.frame(ns);
```

```r
mean_lat = mean(ns$lat, na.rm = T);
mean_lat
```

```
## [1] 7.5
```

But I dont want to see all these messages in my doc. I am going to run the above with option: `include = FALSE`

See nothing got printed above!

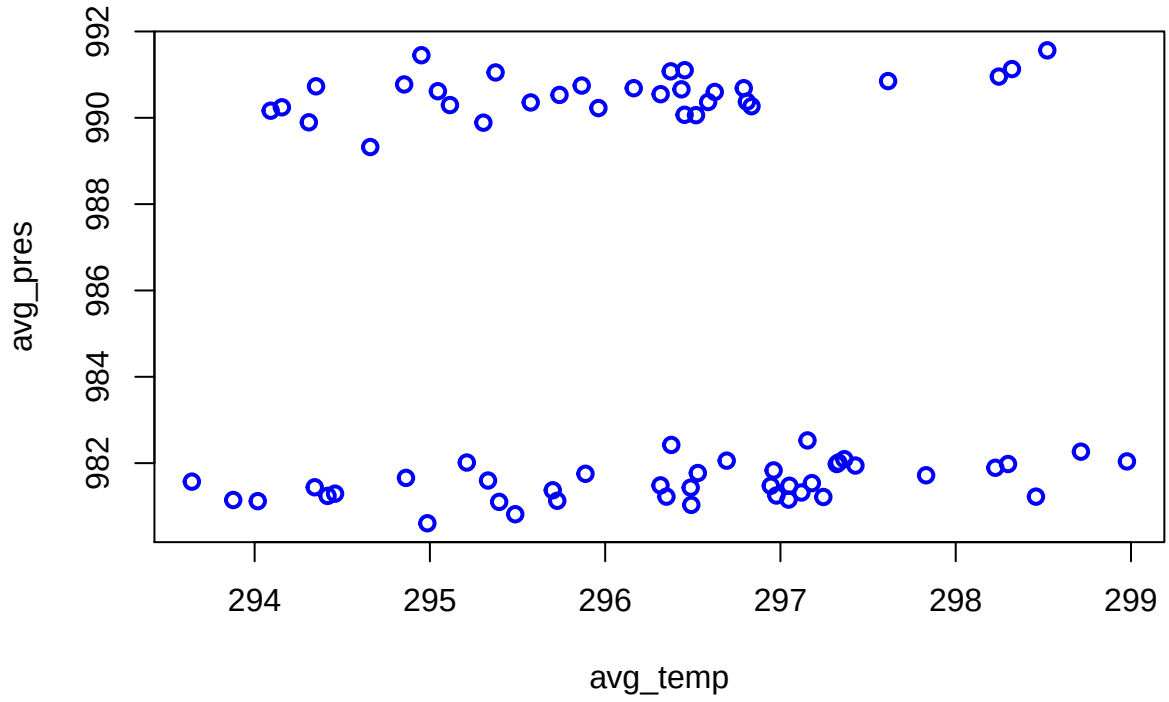
But I do want to display the output but not the code! Use `echo = FALSE` instead.

```
## [1] 7.5
```

Now only the output got printed. This is what I really wanted!

What if I wanted to dynamically use a value in my doc? Like generated from a computation? We can do that by writing within backticks with first letter being `r`. So mean latitude is 7.5. This makes it very easy to update report in future with minimal changes. Lets write counting from 1 to 10: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Now, let's make a plot!



The plot here is a bit too big. I would like a smaller one for my doc:

See the above fits much better!

1.2 Section 2

To get code within the doc (in teletype constant width fonts), use single backtics: `code`, Package `dplyr`

Block quote begins with > sign:

> This is a block quote!

Any text within a pair of * is `*italicized*`: *italicized* and within ** is `**bolded**`: **bolded**

Single star followed by a space: * produces bullet points! 4 blank spaces, a star and then a space: `|  * |` produces sub-itmes! It can be further generalized!

- 1
- 2

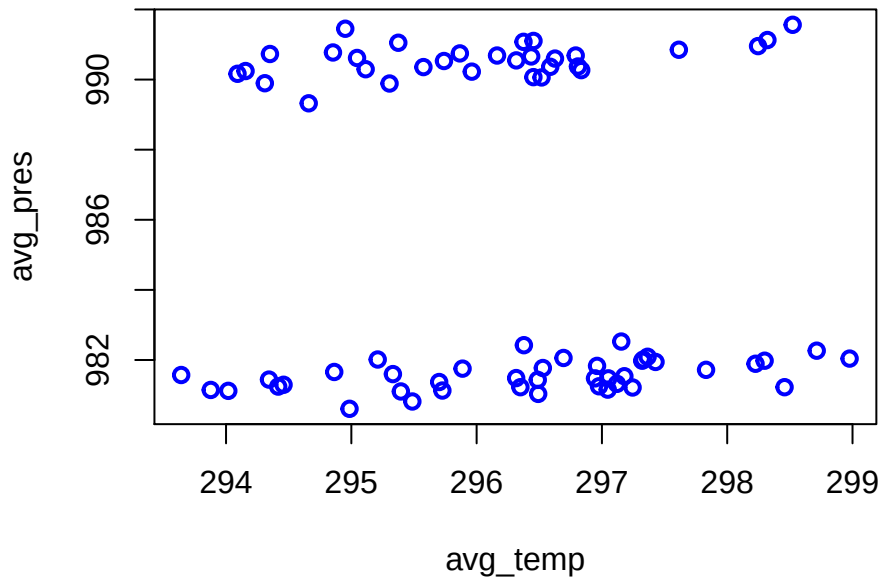


Figure 1: avg pressure vs avg temp

- 2.1
- 2.2
    - 2.2.1

1.3 Section 3

Math mode can be entered by writing everything within pair of dollar signs: `$`.

$F = m \cdot a$, $\lambda^2\gamma$, ∞, and so on!

Write a block of equations using two dollar signs instead of one: `$$`.

$$\int e^x dx = e^x + C$$

.

Use underscore `_` for subscripts and exponent `^` for superscript. `H_0` is H_0 and `H^0` is H^0. Use curly brackets to combine parts of an equation, i.e. to write `lambda^(a+b)` as `\lambda^{a+b}`: λ^{a+b}

1.4 Section 4

Use extra hash `#` for sub-sectioning.

1.4.1 Sub-section 4.1

1.4.2 Sub-sub-section 4.1.1

1.4.3 Sub-sub-sub-section 4.1.1.1

1.4.4 Sub-sub-sub-sub-section 4.1.1.1.1

1.5 Section 5

To create a document, a process called knitting, you can simply click to knit on Rmarkdown interface. Or, you can incoke the command line: `rmarkdown::render("first_doc.Rmd")`

1.6 Section 6

Hyperlink can be added by writing text within braces `[]` followed by the weblink written within parantheses `()`. Thus you write like: `[Google](https://www.google.com/)` to get Google.

Footnote can be added by `[^1]`. Here is one.[1]

You can also add a reference using `[@bib_ref]`. For instance I'll make a reference here: (Baumer et al. 2014). Also don't forget to add a section on References and mention the `.bib` file in YAML metadata.

1.7 Section 7

Let's make a table. Use the `result = "asis"` option to make sure that the table output is processed as is and not further processed!

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu % Date and time: Tue, Jun 26, 2018 - 02:19:00 PM

[1] That's my foot note!

Table 1: Table with Stargazer in Rmarkdown

	Dependent variable:
	y
x	0.981***
	(0.017)
Constant	0.002
	(0.016)
Observations	1,000
R^2	0.778
Adjusted R^2	0.778
Residual Std. Error	0.515 (df = 998)
F Statistic	3,497.193*** (df = 1; 998)
Note:	*p<0.1; **p<0.05; ***p<0.01

1.8 Section 8

Let's make table:

Table 2: Your Caption

First Header	Second Header	Third Header
First row	Data	Very long data entry
Second row	**Cell**	*Cell*
Third row	Cell that spans across two columns	

1.9 Section 9

$$a = b^2 \tag{1}$$

References

Baumer, Ben, Mine Cetinkaya-Rundel, Andrew Bray, Linda Loi, and Nicholas J Horton. 2014. "R Markdown: Integrating a Reproducible Analysis Tool into Introductory Statistics." *ArXiv Preprint ArXiv:1402.1894*.