

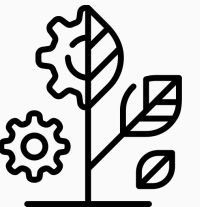
Preparatory step

Data Visualization in R

Intro to Rmarkdown

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Data vizualization process

While performing data visualization, you will find yourself constantly ping-ponging back and forth between three things:

- Writing code.
- Looking at output.
- Taking Notes.

Rmarkdown is a solution!

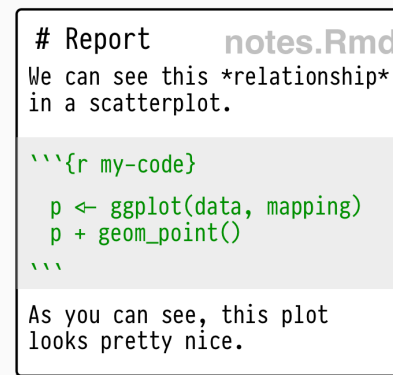
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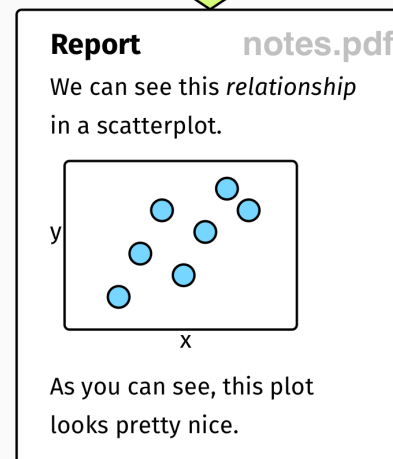
Rmarkdown is a solution!

It will make your code:

- Reproducible
- Easy to adjust if your raw data changed
- Easy to communicate the results



knit in R



Rmarkdown in .Rmd file

The image shows a screenshot of the RStudio editor interface with an R Markdown file. The file content is as follows:

```
1 ---
2 title: "notes"
3 author: "Kieran healy"
4 date: "9/13/2017"
5 output: html_document
6 ---
7
8 ```{r setup, include=FALSE}
9 knitr::opts_chunk$set(echo = TRUE)
10 ```
11
12 ## R Markdown
13
14 This is an R Markdown document. Markdown is a simple formatting syntax for
15 authoring HTML, PDF, and MS Word documents. For more details on using R Markdown
16 see <http://rmarkdown.rstudio.com>.
17
18 When you click the **Knit** button a document will be generated that includes
19 both content as well as the output of any embedded R code chunks within the
20 document. You can embed an R code chunk like this:
21
22 ```{r cars}
23 summary(cars)
24 ```
25
26 ## Including Plots
27
28 You can also embed plots, for example:
29
30 ```{r pressure, echo=FALSE}
31 plot(pressure)
32 ```
33
34 Note that the `echo = FALSE` parameter was added to the code chunk to prevent
35 printing of the R code that generated the plot.
```

Annotations on the image:

- Process the whole document**: Points to the **Knit** button in the top toolbar.
- Information about the document**: Points to the YAML header (lines 2-5).
- Code chunk**: Points to the first R code chunk (lines 8-10).
- Run just this chunk**: Points to the play button icon next to the first code chunk.
- Run all chunks up to this point**: Points to the play button icon next to the second code chunk.
- Set options for this code chunk**: Points to the gear icon next to the second code chunk.
- Notes and discussion, with formatting instructions**: Points to the main body of the document (lines 12-35).

Why do you need Rmd in the course?

Lectures and tutorials were designed in Rmarkdown (using `xaringan` package).

This is how the source code of the slide 2 looks like:

<pre>285 **Rmarkdown is a solution!** 286 287 It will make your code: 288 - Reproducible 289 - Easy to adjust if your raw data changed 290 291 - Easy to communicate the results 292] 293 294 .pull-right[295 296 ```{r, out.width='60%', fig.align='center', echo= FALSE} 297 knitr::include_graphics('figs/ch-02-simple-knit-tall.png') 298 299 300 301] 302 303 304 ??? 305 Writing code. You will write a lot of code to produce plots. You will also write code to load your data, to look quickly at tables of that data. Sometimes you will want to summarize, rearrange, subset, or augment your data, or run a statistical model with it. You will want to be able to write that code as easily and effectively as possible. 306 Looking at output. Your code is a set of instructions that, when executed, produces the output you want: a table, a model, or a figure. It is often helpful to be able to see that output, and its partial results. While we're working, it's also useful to keep the code and the things produced by the code close together, if we can. 307 Taking Notes. You will also be writing about what we are doing, and what your results mean. When learning how to do something in ggplot, for instance, you will want to make notes to yourself about what you did, why you wrote it this way rather than that, or what this new concept, function, or instruction does. Later, when doing data analysis and making figures, you will be writing up reports or drafting papers.</pre>	<p>Tutorial1.Rmd</p>
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Why do you need Rmd in the course?

- Lectures and tutorials were designed in Rmarkdown (using [xaringan](#) package).
- The source code for lectures and tutorials is available via [GitHub](#)
... so you can learn how it works
- It is better to make your project in Rmarkdown and submit it as .Rmd and .pdf files for evaluation.