

Communicating with Data via R Markdown

R Markdown Basics

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@statsgen

4th October 2019 | COMBINE | Sydney, Australia

ⓘ These slides are viewed best by Chrome and occasionally need to be refreshed if elements did not load properly. See here for [PDF](#) .

Hi! I'm Emi! 🖐️

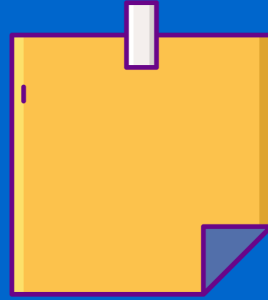
I'm a lecturer in statistics at The University of Sydney (soon moving to Monash University).



Introduce yourself to someone you don't know!

03:00

HELP!



Please send SOS signal by attaching
sticky note on your laptop.



Please help your neighbours 🙏



Open

<http://bit.ly/rmd-combine-2019>

and save a permanent copy to your
RStudio Cloud account.



Schedule

Time	Activity
1:00PM - 1:25PM	Session 1: R Markdown Basics
1:25PM - 1:30PM	Break 
1:30PM - 3:00PM	Session 2A: Reproducible Reports I
3:00PM - 3:30PM	Afternoon Tea  
3:30PM - 4:10PM	Session 2B: Reproducible Reports II
4:10PM - 4:15PM	Break 
4:15PM - 5:00PM	Session 3: Pretty Presentations

R Markdown Basics

File extension is Rmd



```
first-rmarkdown.Rmd x
---
title: "My first R Markdown"
output: html_document
---
## This is a second-level header

This is some text written in R Markdown.



I can use markdown syntax here.

```{r}
some R code
1 + 2
```
```

YAML: meta
data fenced
by ---

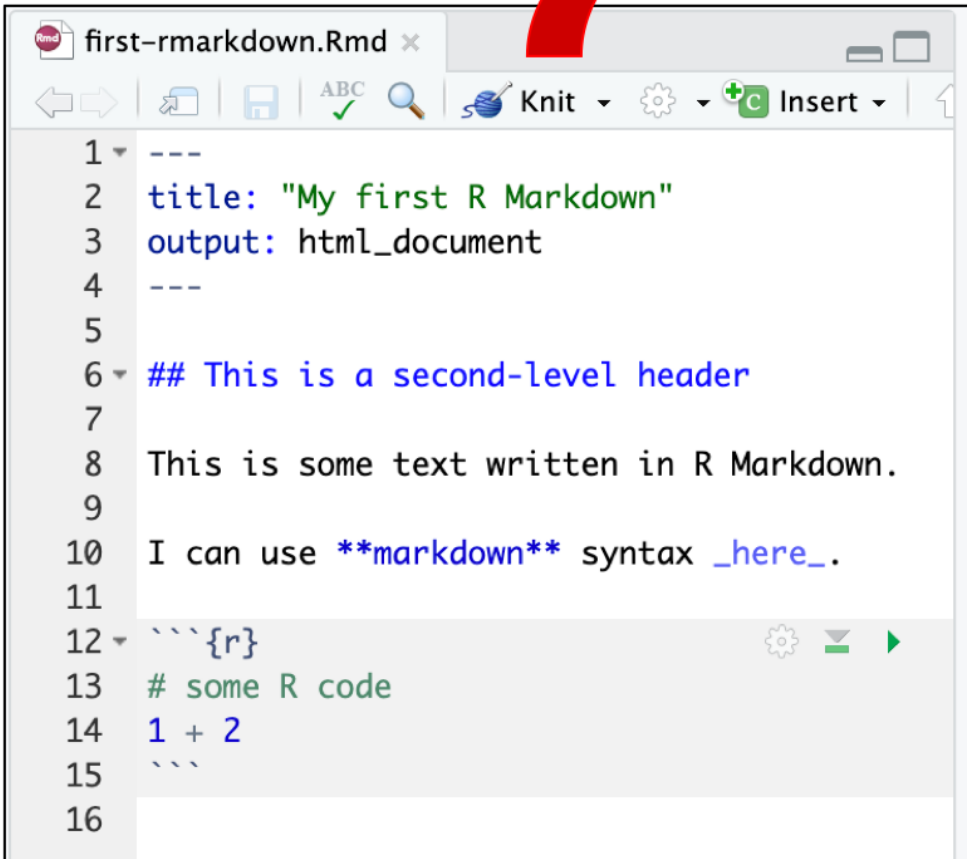
Text can use
markdown

Code chunk:
fenced by ```

Knitting: Rmd  → md  → html 

Output file name
matches Rmd file name

first-rmarkdown.html



```
1 ---
2 title: "My first R Markdown"
3 output: html_document
4 ---
5
6 ## This is a second-level header
7
8 This is some text written in R Markdown.
9
10 I can use markdown syntax here.
11
12 ```{r}
13 # some R code
14 1 + 2
15 ```
16
```

My first R Markdown

This is a second-level header

This is some text written in R Markdown.

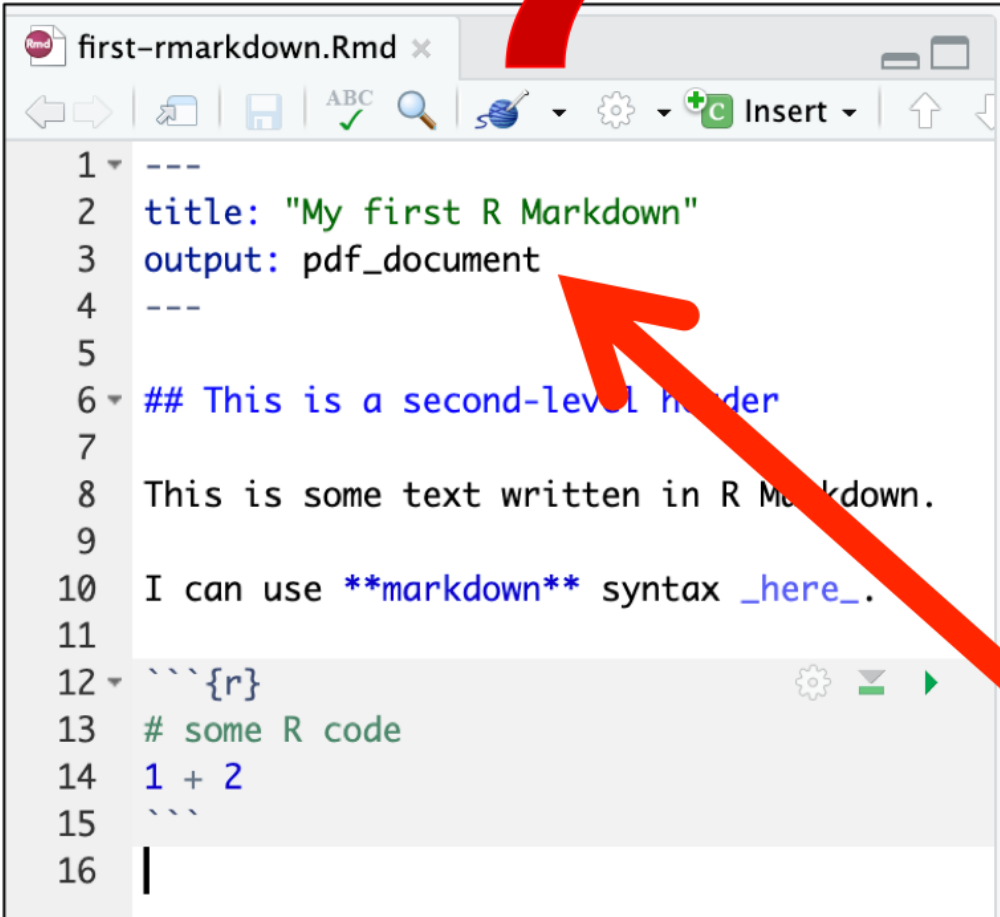
I can use **markdown** syntax *here*.

```
# some R code
```

```
1 + 2
```

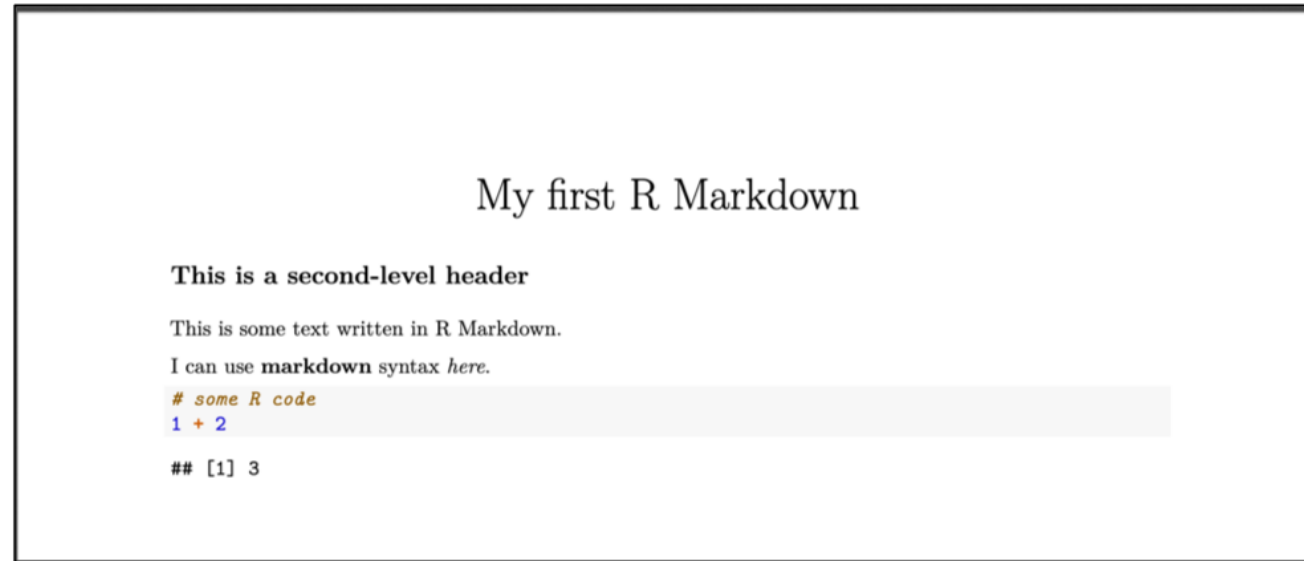
```
## [1] 3
```


Knitting: Rmd → md → pdf



```
1 ---
2 title: "My first R Markdown"
3 output: pdf_document
4 ---
5
6 ## This is a second-level header
7
8 This is some text written in R Markdown.
9
10 I can use markdown syntax here.
11
12 ```{r}
13 # some R code
14 1 + 2
15 ```
16 |
```

first-rmarkdown.pdf



pdf output

There are many other **output formats** possible with R Markdown via Pandoc.

Can you name another 3?



R Markdown under the hood: `html_document`

`knitr`  does the hard work of converting Rmd  \rightarrow md 
Rmd  md 

```
---  
title: "My Report"  
output: html_document  
---  
  
# Hello  
  
```${r}``  
1 + 1
```${r}``
```

```
---  
title: "My Report"  
output: html_document  
---  
  
# Hello  
  
```${r}``  
1 + 1
```${r}``  
  
```${r}``  
[1] 2
```${r}``
```

R Markdown under the hood: `html_document`

Then `rmarkdown`  prepares md  for `pandoc` to convert to html .

md  html 

```
---
title: "My Report"
output: html_document
---

# Hello

```r
1 + 1
```






## [1] 2
```
```

```
<body>
<div class="container-fluid main-container">
<div class="fluid-row" id="header">
<h1 class="title toc-ignore">My Report</h1>
</div>
<div id="hello" class="section level1">
<h1>Hello</h1>
<pre class="r"><code>1 + 1</code></pre>
<pre><code>## [1] 2</code></pre>
</div>
</div>
</body>
```

⚠ This html file is missing  
some elements due to  
restriction of space.



# R Markdown under the hood: pdf\_document

Same as before: knitr  converts Rmd  → md   
Rmd  md 

```

title: "My Report"
output: pdf_document

Hello

```${r}``  
1 + 1  
```${r}``
```

```





title: "My Report"
output: pdf_document

Hello

```${r}``  
1 + 1  
```${r}``  

```${r}``  
## [1] 2  
```${r}``
```

# R Markdown under the hood: pdf\_document

Then rmarkdown  prepares md  for pandoc to convert to tex   $\rightarrow$  pdf .

md 

```

title: "My Report"
output: html_document


Hello

```\r  
1 + 1  
```\r  

[1] 2
```\r
```

tex 

```
\begin{document}  
\maketitle  
\hypertarget{hello}{%  
\section{Hello}\label{hello}}  
\begin{Shaded}  
\begin{Highlighting}[ ]  
\DecValTok{1} \OperatorTok{+}\StringTok{ }\DecValTok{1}  
\end{Highlighting}  
\end{Shaded}  
\begin{verbatim}  
## [1] 2  
\end{verbatim}  
\end{document}
```

 This tex document is missing elements before \begin{document} due to restriction of space.

Get started with

challenge-01.Rmd



05:00

Advanced question

How do you render different output formats at once?



That's it!

These slides are made using xaringan R-package.

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 [@statsgen](https://twitter.com/statsgen)

Check that you can:

- ✓ Make a html document from .Rmd
- ✓ Make a pdf document from .Rmd
- ✓ Have some understanding of how R Markdown works under the hood.
- ✓ Have some understanding of how some R Markdown components works only in specific output formats.