

Communicating with Data via R Markdown

R Markdown Basics

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@statsgen

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

Hi! I'm Emi! 🙌

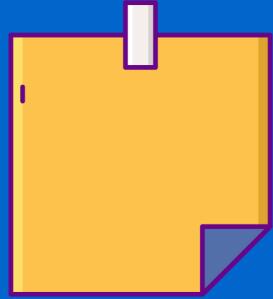
I'm a lecturer in statistics at The University of Sydney (soon moving to Monash University).



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	<i>Break</i> 
1:30PM - 3:00PM	Session 2A: Reproducible Reports I
3:00PM - 3:30PM	<i>Afternoon Tea</i> 
3:30PM - 4:10PM	Session 2B: Reproducible Reports II
4:10PM - 4:15PM	<i>Break</i> 
4:15PM - 5:00PM	Session 3: Pretty Presentations

R Markdown Basics

File extension is Rmd

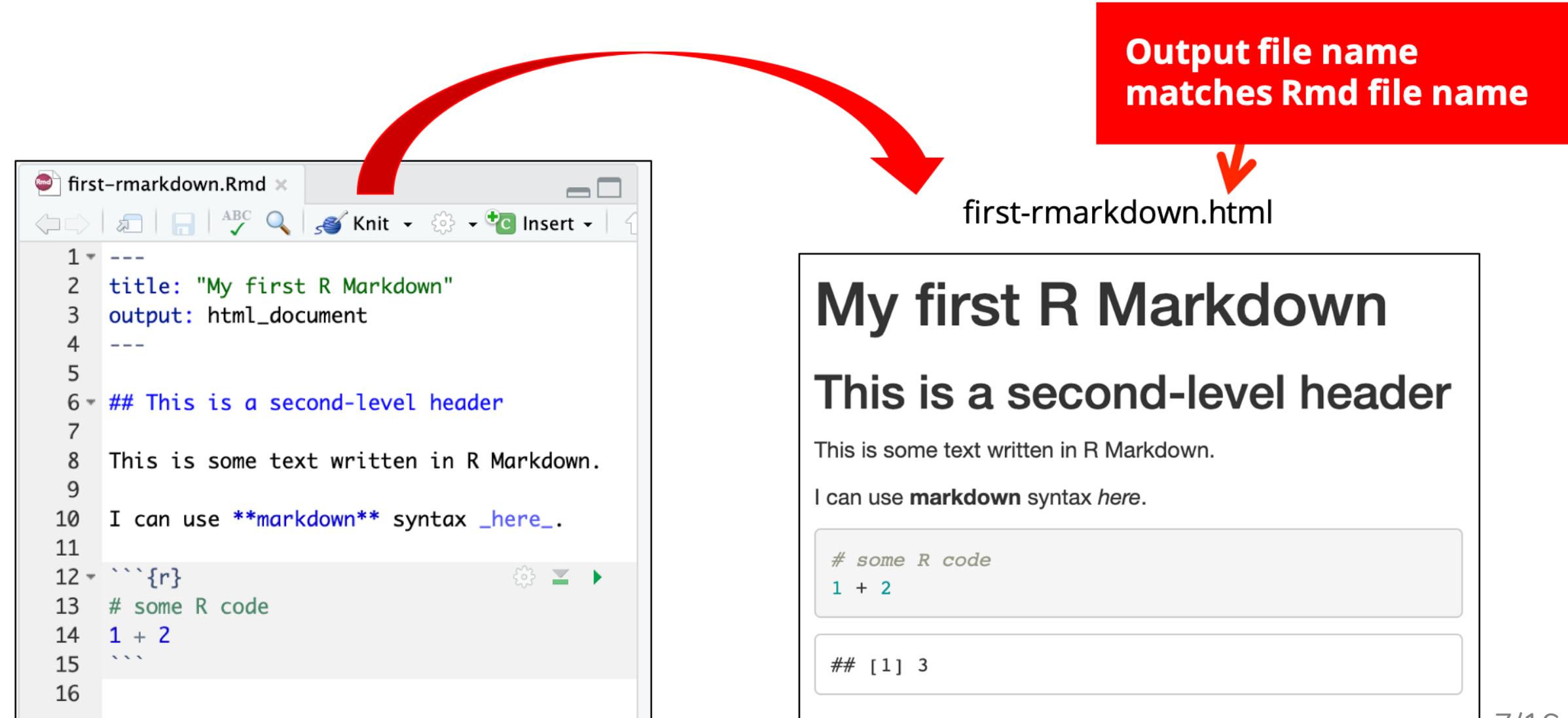
```
1 ---  
2 title: "My first R Markdown"  
3 output: html_document  
4 ---  
5  
6 ## This is a second-level header  
7  
8 This is some text written in R Markdown.  
9  
10 I can use **markdown** syntax _here_.  
11  
12 ```{r}  
13 # some R code  
14 1 + 2  
15```
```

YAML: meta data fenced by ---

Text can use markdown

Code chunk: fenced by ```

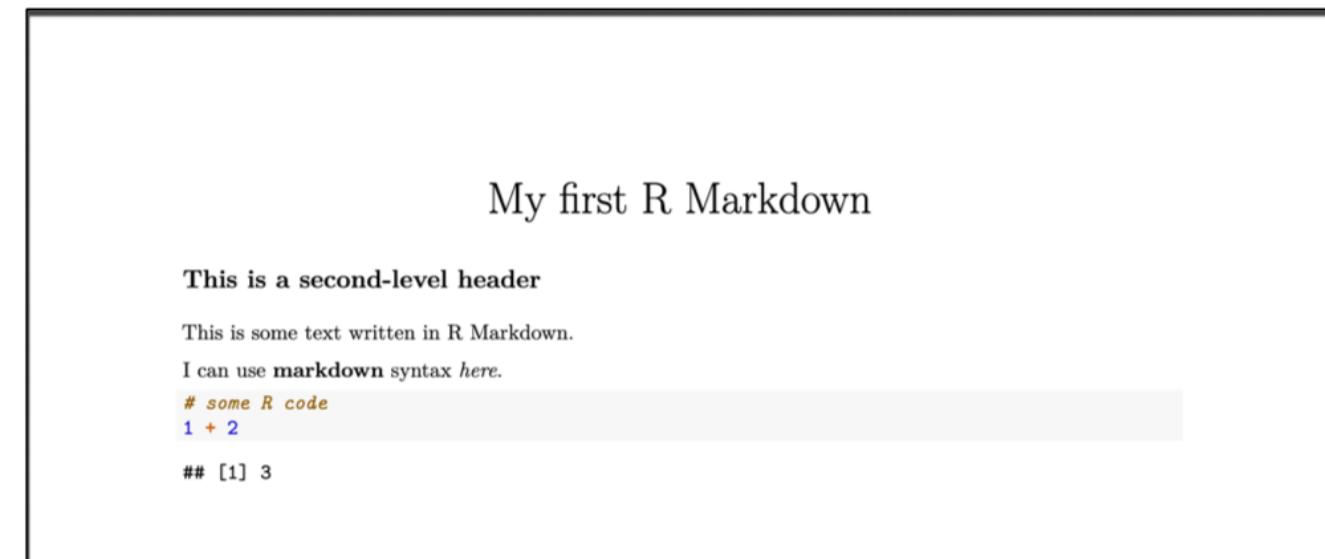
Knitting: Rmd → md → html



Knitting: Rmd → md → pdf



```
first-rmarkdown.Rmd x
Rmd ABC S C Insert ↑ ↓
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 |
```



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  → md 

Rmd

md 

```
---
```

```
title: "My Report"
```

```
output: html_document
```

```
---
```

```
# Hello
```

```
```{r}
```

```
1 + 1
```

```
```
```

```
---
```

title: "My Report"
output: html_document

```
---
```

Hello

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

```
---
```

[1] 2

```
````
```

# R Markdown under the hood: html\_document

```

```

```
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
```

```
```
```

```

```

```
title: "My Report"
```

```
output: pdf_document
```

```

```

```
Hello
```

```
```r
```

```
1 + 1
```

```
```
```

```
```
```

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

```
```
```

# R Markdown under the hood: `pdf_document`

Then `rmarkdown` 📦 prepares md 📄 for pandoc to convert to `tex` 📄 → pdf 📄.

md 📄

tex 📄

```

```

```
title: "My Report"
```

```
output: html_document
```

```

```

```
Hello
```

```
```r
```

```
1 + 1
```

```
```
```

```
...
```

```
[1] 2
```

```
```
```

```
\begin{document}
\maketitle
\hypertarget{hello}{%
\section{Hello}\label{hello}}
\begin{Shaded}
\begin{Highlighting}[]
\DecValTok{1} \operatorname{\!+\!} \StringTok{ }
\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.

The workshop materials are licensed
under .

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 @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.