

Week 12 - Dynamic, Reproducible Presentations Using `xaringan`

Andrew Stewart

Andrew.Stewart@manchester.ac.uk



@ajstewart_lang



<https://github.com/ajstewartlang>

| Week | Topic |
|------|---|
| 1 | Introduction, Open Science, and Power |
| 2 | Introduction to R |
| 3 | Data Wrangling and Visualisation |
| 4 | General Linear Model - Regression |
| 5 | General Linear Model - Regression |
| 6 | No Timetabled Lecture - Reading Week |
| 7 | Consolidation Lab |
| 8 | General Linear Model - ANOVA |
| 9 | General Linear Model - ANOVA |
| 10 | Tidy Thursday Data Wrangling & Visualisation Challenge |
| 11 | Reproducing your Computational Environment using Binder |
| 12 | Dynamic, Reproducible Presentations Using xaringan |

Semester 1 Assignments

Data wrangling and visualisation – Due December 5th

ANOVA/ANCOVA – Due January 17th

Xaringan

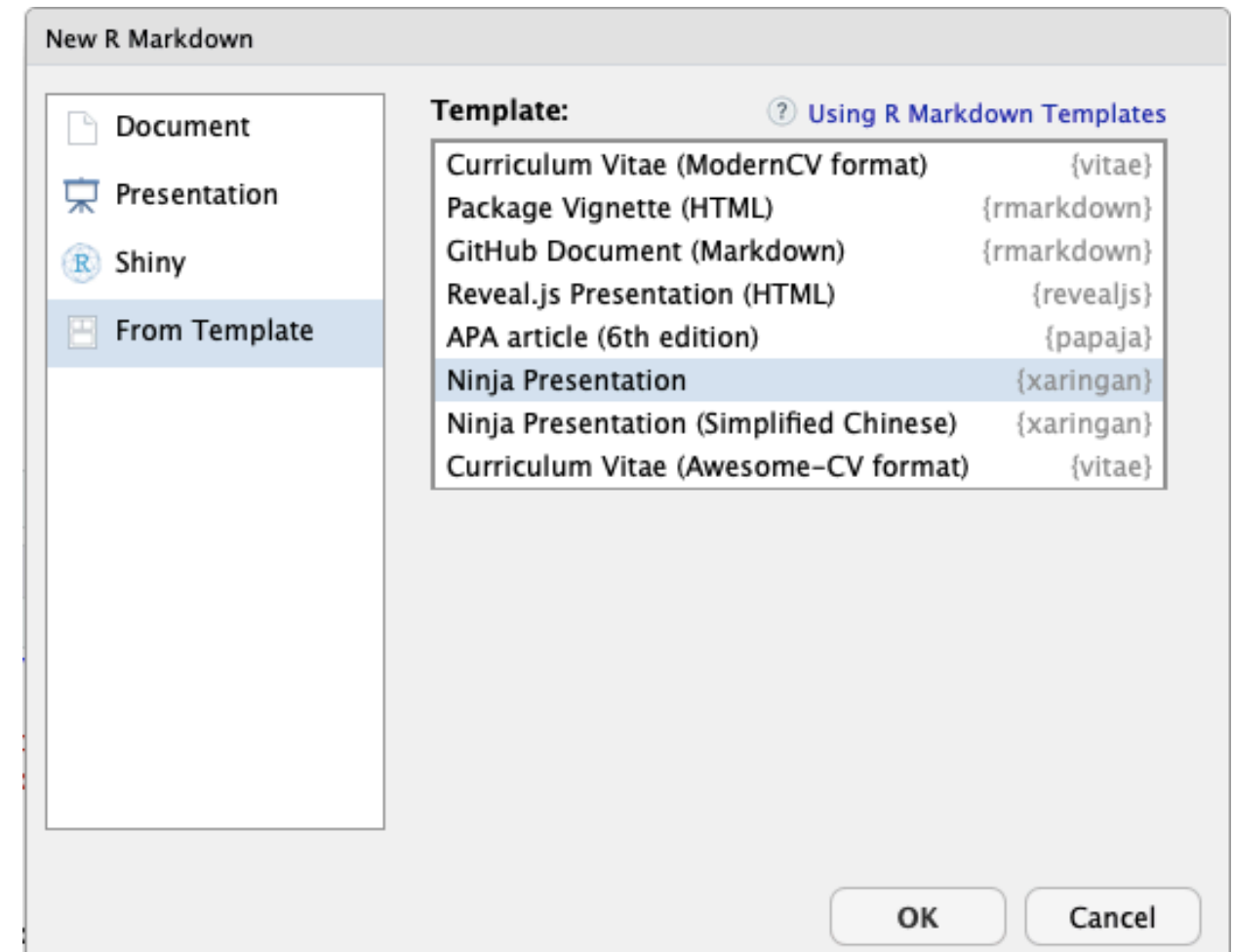
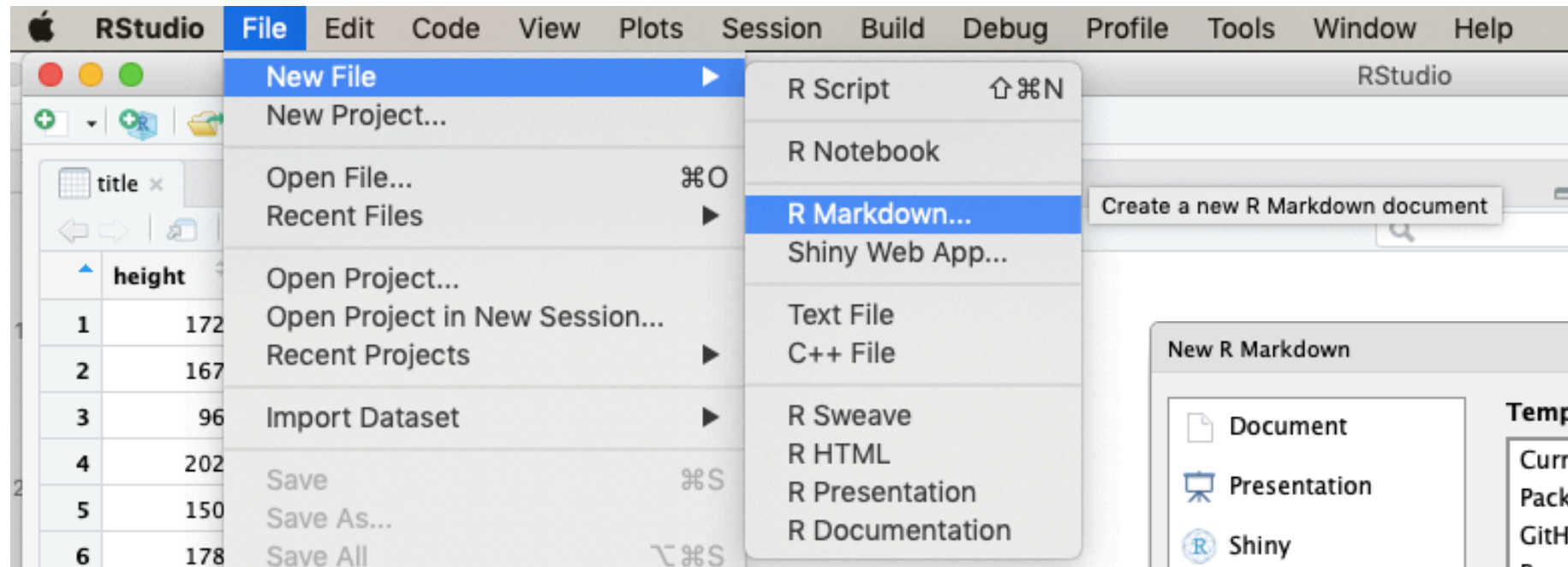
- The xaringan package for R allows you to write presentations in Markdown which can then be rendered as .html files.
- Allows you to include R analysis (data, code, and output) in a presentation without any cutting and pasting.
- Also allows you to rebuild a presentation at the press of a button if your analysis changes, you add more data etc.
- Allows for fully reproducible and open presentations!

<https://bookdown.org/yihui/rmarkdown/xaringan.html>

An example...

https://ajstewartlang.github.io/SIPS_2019/SIPS_presentation.html#51

- First, install the package xaringan.
- Then...



Untitled1 x

← →

ABC

Knit

Insert

↑ ↓

Run

⌂

```
1 ---
2 title: "Presentation Ninja"
3 subtitle: "✂<br/>with xaringan"
4 author: "Yihui Xie"
5 institute: "RStudio, Inc."
6 date: "2016/12/12 (updated: `r Sys.Date()`)"
7 output:
8   xaringan::moon_reader:
9     lib_dir: libs
10    nature:
11      highlightStyle: github
12      highlightLines: true
13      countIncrementalSlides: false
14 ---
15
16 background-image: url(https://upload.wikimedia.org/wikipedia/commons/b/be/Sharingan\_triple.svg)
17
18 ```{r setup, include=FALSE}
19 options(htmltools.dir.version = FALSE)
20 ```
21
22 ???
23
24 Image credit: [Wikimedia Commons](https://commons.wikimedia.org/wiki/File:Sharingan\_triple.svg)
25
26 ---
27 class: center, middle
28
29 # xaringan
30
31 ### /ja:.'riŋ.gan/
32
33 ---
34 class: inverse, center, middle
35
36 # Get Started
37
38 ---
39
```

1:1 Presentation Ninja R Markdown

- Try 'knitting' the template to see what happens...

- You can look at the code at the same time that you cycle through the slides - xaringan is Markdown but with a few extra things that allow you to change the format of your slides...
- Your RMD script can include CSS (Cascading Style Sheets) code which describes how HTML elements are to be displayed.

- Delete everything after from line 15 and paste this at line 15:

```
---
```

```
class: center, inverse
```

```
# A new slide
```

```
Content.
```

- In the header (around line 9) add `seal: false` after the `xaringan::moon_reader:` line - this will allow you to write your own title slide:

```
output:
```

```
  xaringan::moon_reader:
```

```
    seal: false
```

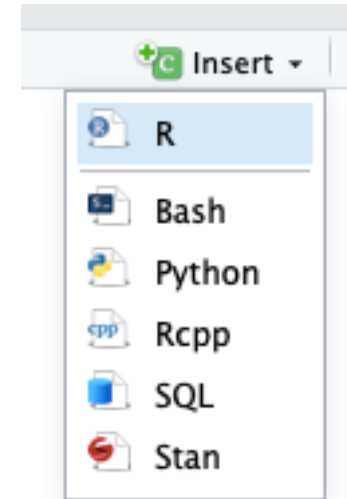
- You can write text as you do in R Markdown - to make text italics use `_ either side like this italics` and to make text bold use two underscores `__bold__`
- You can use `.pull-left[]` to enclose the text you want to be presented on the left hand side of a slide and `.pull-right[]` to enclose text to be presented on the right...

```
---  
.pull-left[  
here is some text in italics  
]  
  
.pull-right[  
and here is some in bold  
]
```

- You can add chunks of R code, and suppress displaying the code (use `echo=FALSE` to not display the code, `message=FALSE` to not display messages, `warning=FALSE` to not display warnings, and `eval=FALSE` to not run the code).
- See the R Markdown cheatsheet for other options:

`https://github.com/ajstewartlang/
MRes_Advanced_Data_Skills/blob/master/
R_cheatsheets/R_Markdown%20cheatsheet.pdf`

- You can insert a chunk of R code by clicking on Insert R.
- Or by clicking CMD-Alt-I (on a Mac) and Ctrl-Alt-I (on a PC).



```
---  
```{r, echo=FALSE, message=FALSE}  
library(tidyverse)
```  
  
```{r}  
head(starwars)
```
```

```
head(starwars)
```

```
## # A tibble: 6 x 13
##   name    height  mass hair_color skin_color eye_color birth_year gender
##   <chr>   <int> <dbl> <chr>      <chr>      <chr>      <dbl> <chr>
## 1 Luke...   172    77 blond      fair        blue        19    male
## 2 C-3PO     167    75 <NA>      gold        yellow      112    <NA>
## 3 R2-D2      96    32 <NA>      white, bl... red         33    <NA>
## 4 Dart...   202   136 none      white       yellow      41.9  male
## 5 Leia...   150    49 brown     light      brown       19    female
## 6 Owen...   178   120 brown, gr... light      blue       52    male
## # ... with 5 more variables: homeworld <chr>, species <chr>, films <list>,
## #   vehicles <list>, starships <list>
```

```

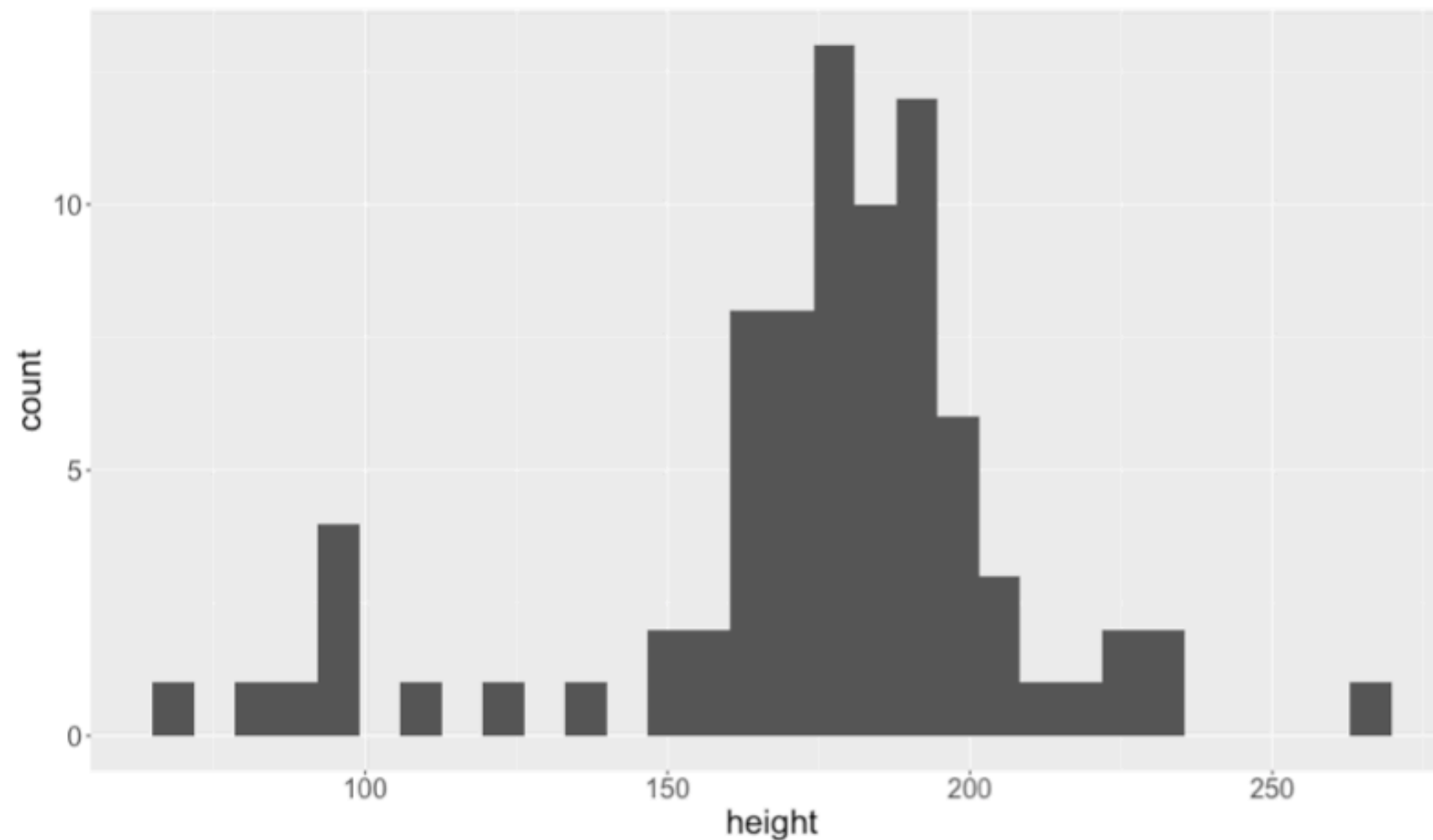
` `` {r, warning=FALSE, message = FALSE, fig.width=12}
starwars %>%
  ggplot(aes(x = height)) +
  geom_histogram() +
  theme(text = element_text(size = 20))
` ``

```

```

starwars %>%
  ggplot(aes(x = height)) +
  geom_histogram() +
  theme(text = element_text(size = 20))

```



- You can also add images in formats including .jpg and .png - just make sure you keep the images at the same level as your RMD script, or specify the path needed to find them.

```
# Opeth 🤘  
`` `{r, echo=FALSE, out.width="100%"}  
knitr::include_graphics("opeth.jpg")  
`` `
```

Opeth 🤘



And that's largely it!

A few caveats...

- The first time you use xaringan you will find it slow - it also takes a while to stop thinking in Powerpoint or Keynote terms and start thinking in R and Markdown terms.
- Xaringan presentations are probably most useful when you want to re-run your code without changing the rest of the presentation - you just need to re-knit your Markdown script.

You have a go at writing a brief presentation which includes some R code and output...