R Markdown and why I love it
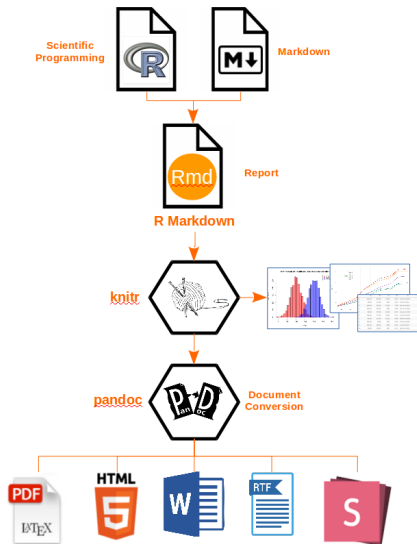
Rebecca Killick(r.killick@lancs.ac.uk)
R-Ladies, Feb 20

- What is Rmarkdown?
- Rmarkdown in RStudio
- Rendering to different formats
- Code Chunks
- Short Tutorial
- Advanced features

What is Rmarkdown?

- Plain text file with extension .Rmd

- Reproducible record of your work

- Keeps code and report in a single place

- Documents: HTML, PDF, Word

- Slides: HTML, Beamer Powerpoint

- Other: dashboards, books, websites, shiny documents

Rmarkdown in RStudio

- YAML Header
  - Instructions for how to build the document
- Text
  - Can include parameters from the code
- Code chunks
  - Raw code (R/C/Python) that is run and the output stored/returned
  - three back ticks for starting code chunks, single for inline
    - next to the 1 key!
- Uses markdown syntax but can include direct latex / html if rendering to those formats

Mathematics & Statistics | Lancaster University

Short tutorial

1. Create and build the template Rmarkdown document.
2. Change the output to HTML, PDF, Word and view them.
3. Add a code chunk to draw a histogram of the speed variable from the *cars* object - don't include the code.
4. Add some text which displays the mean of the speed variable in the middle of a sentence. Remember single back ticks for inline.

Presentation:

1. Create a presentation (format is your choice)
2. Include the histogram of the speed variable as a whole slide graphic
3. Add the average speed as a bullet point at the top of the histogram.

Advanced Features

- Latex headers
- Hacking slide templates (such as this one)
- Journal article templates https://github.com/rstudio/rticles
- Dashboards and interactive documents (shiny)
- Whole websites and books

My latex lifesaver:

```
includes:
  in_header: header.tex
  keep_tex: true
```

Useful resources

RStudio site: https://rmarkdown.rstudio.com/

Cheatsheet: https://rstudio.com/wp-content/uploads/2015/02/rmarkdown-cheatsheet.pdf

Reference Sheet: https://www.rstudio.com/wp-content/uploads/2015/03/rmarkdown-reference.pdf

Rmarkdown book: https://bookdown.org/yihui/rmarkdown/

Markdown basics:
https://rmarkdown.rstudio.com/authoring_basics.html

Hadley's R for data science Markdown chapter:
https://r4ds.had.co.nz/r-markdown.html