

Bookdown Class Demo

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Using RStudio to create books

using epub_book, gitbook, pdf_book

1 Why Bookdown

1.1 *Why Not?!*

Publishing a book can be overwhelming and daunting. There are multiple of reasons why you should use Bookdown versus other programs such as LaTeX or Word. Some of the problems that Yihui Xie mentioned on his site, Bookdown include: that current programs are too difficult to use to write books as they should be easier to format, write, and compile; using Bookdown is cheaper for people to buy; not enough contributors; having to wait a long time before next edition; and the content is not dynamic enriched.

You will need to install R package bookdown: `# stable version on CRAN install.packages("bookdown")` `# or development version on GitHub # devtools::install_github('rstudio/bookdown')`

2 Building Bookdown

Creating a book is easy.

Create a new project:
New Project

```
Empty Project
Directory Name
Choose your location
Hit Create Project
```

```
New Markdown (First) file:
  New File
  R Markdown
  Give it a title and author
  Hit OK
```

```
Save as index.Rmd
  Update the output bookdown::gitbook
  Add site bookdown:bookdown_site
```

Every additional, new, Rmd file will become a new chapter. Each R Markdown file must start immediately with the chapter title using the first-level heading, e.g., `# Chapter Title`. Each chapter will then be saved and placed in order as completed, unless you tell it otherwise. Its best to save as 01_, 02_, 03_ etc.

For bookdown to determine that the file is a new chapter the chapter title should start with the `#` each sub-level title will increase the number of `#`.

2.1 Headers

As I just mentioned, section headers can be written after a number of pound signs.

```
# First-level header, such as Chapter Headers
## Second-level header
### Third-level header
```

It's important to note that, if you do not want a certain heading to be numbered, such as your index page, you can add `{-}` after the heading.

```
# Index {-}
```

3 Inline Formatting

Inline formatting will provide your book with aesthetics and allow for a more enriched content.

Italic text by surrounding it with underscores or asterisks, for example, `_text_or*text*`

bold text by using two underscores `__text__` or two asterisks `**text**`

subscript are surrounded text with `~` such as `H~2~S0~4~` (H_2SO_4)

superscript includw two carets (`^`) surrounding the text, such as `Cl0~-1^` (ClO^{-1}).

Inline code can be created by using a pair of backticks, for example, `'code'`

SMALL CAPS can be made by the HTML tag such as `Small Caps` (SMALL CAPS)

Links are created using `[text](link)`, for example `[RStudio](https://www.rstudio.com)` (RStudio)

Syntax for images is similar: just add an exclamation mark, for example `![alt text or image title](path/to/image)`

Footnotes are put inside the square brackets after a caret[^][], for example, [^][These were taken from Bookdown.org]¹

4 R Coding

All standard R coding can be used in Bookdown to include plots, mathematic equations, and even Shiny Apps.

Reviewing your pages. I must say, you can be obsessed with this. I hate, hate, hate bad pagination. If you want to review the page you are currently working on, use the knit command. If you want to see the entirety of your book, use the build book feature.

4.1 Mathematic equations

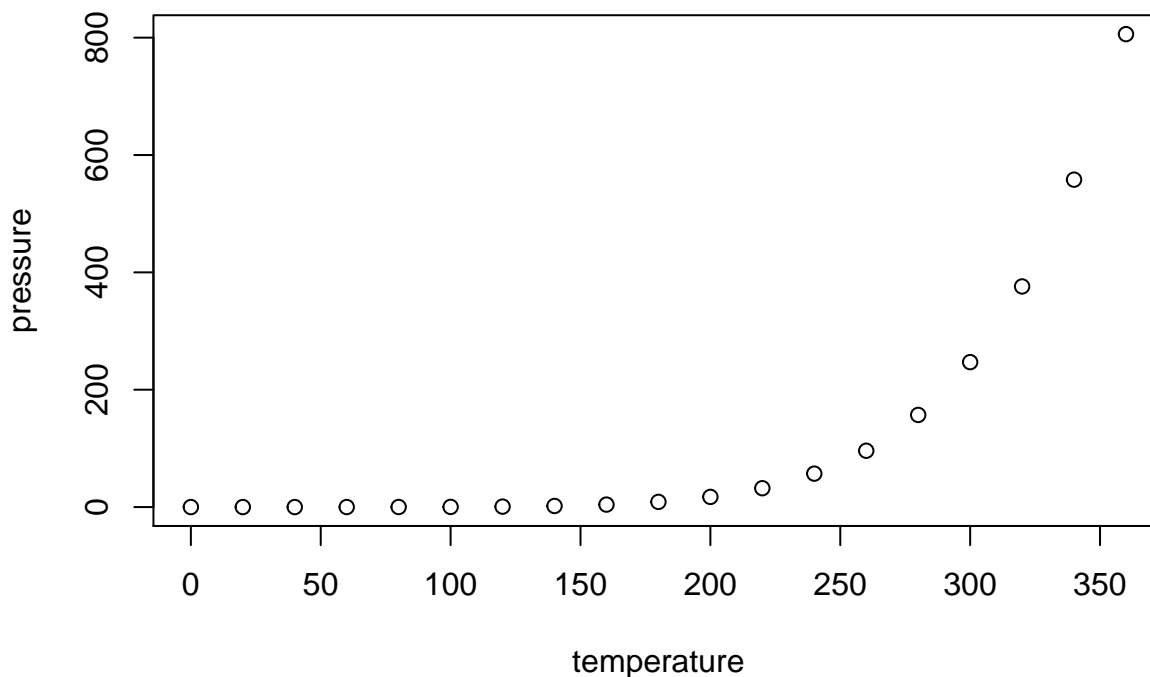
These are tedious along, let alone in a coding environment. Instead of having line after line of forward slashes, you can use the Addins feature on the top of the ribbon next to Workspace Preview. Once selected, choose the Input LaTeX Math, and type away.

This was generated as I typed $m^{2+3} \backslash + \ m^{4+2} \backslash } = \ m^x$ and it gets even more complicated such as:
 $f(k) = \binom{n}{k} p^k (1-p)^{n-k}$

4.2 Plots

You can also embed plots and with a label you can also reference to them. For a text reference is (ref:label) text, where label is a unique label throughout the document for text. It must be in a separate paragraph with empty lines above and below it.²

```
plot(pressure)
```



¹These were taken from Bookdown.org

²Xie, Yihui, 2016

5 References

Xie, Yihui. 2016a. Bookdown: Authoring Books and Technical Documents with R Markdown. <https://github.com/rstudio/bookdown>.

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