Xác suất thống kê

Duc Nguyen

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Learning stat

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How to use tools

2.1 Tạo thư mục làm việc

Khi sử dụng Rstudio thì nên tạo thư mục project để toàn bộ files sẽ nằm trong đó.

Cách thực hiện xem ở đây https://alexd106.github.io/intro2R/howto.html#r studio_proj-vid

Lợi thế là trong folder project này, ta có thể tạo các folder con như images, data, tables, ... để thuận tiện lưu riêng từng loại dữ liệu. [hiện tại làm sao để cấu hình cho hình ảnh nó tự động lưu theo từng folder thì chưa biết cách, thấy có package 'here' mà không biết cách dùng).
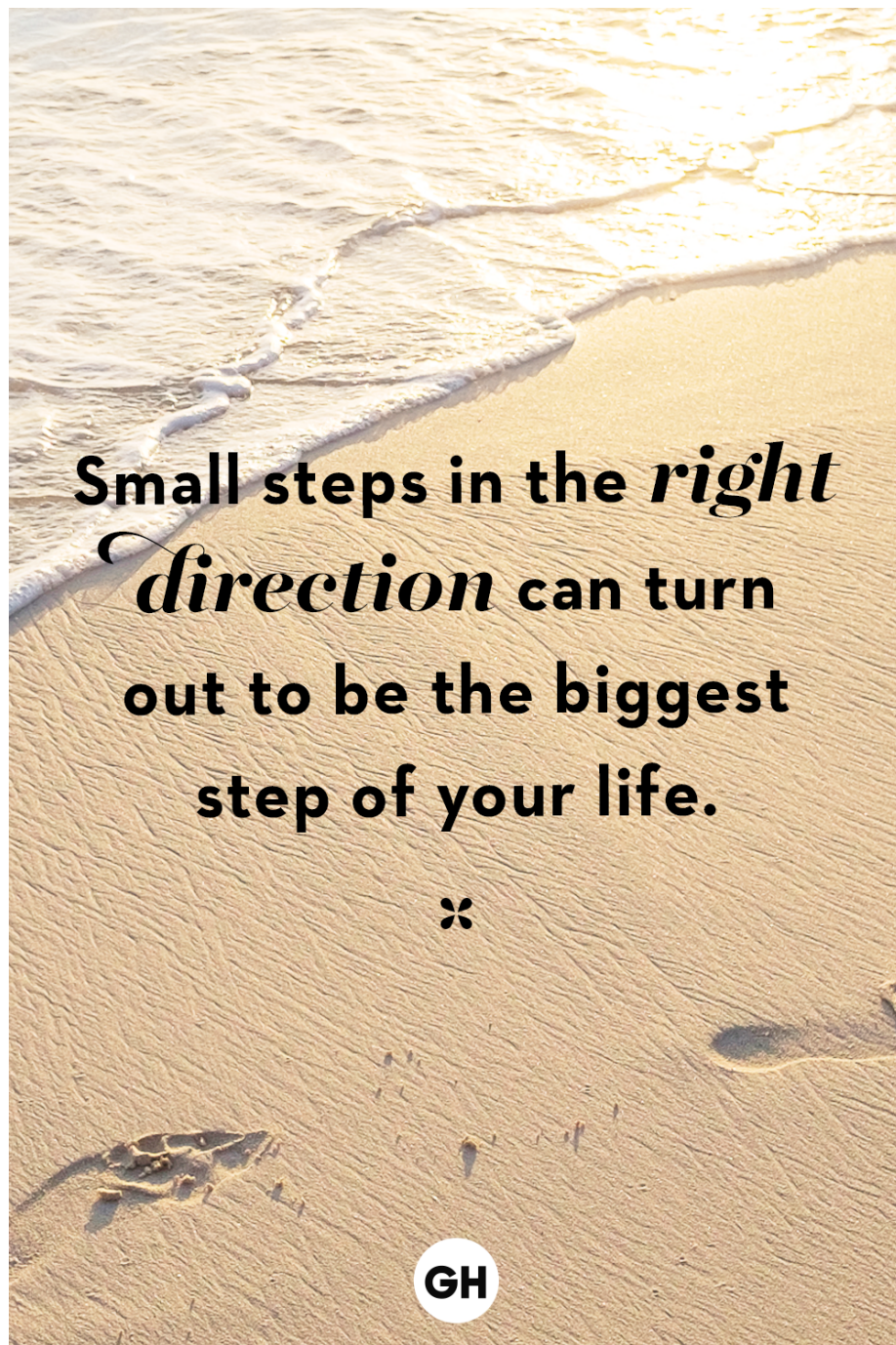
Lưu ý là khi dùng bookdown để render books thì tên của heading là ghi tiếng Anh cho lành, vì nếu ghi tiếng Việt thì nó render bị lỗi unicode.

2.2 Chèn hình ảnh

Có các cách chèn hình khi sử dụng Rstudio như sau:

• Chuyển qua chế độ Visual rồi insert hình ảnh. Sau đó hình ảnh sẽ được lưu trong folder _book/images khi render bằng knitr.

• Nếu gõ theo kiểu source code thì

```
knitr::include_graphics("images/cover.jpg")
```

- Nếu copy và paste từ trên Internet thì dùng add-on imageclipr https://github.com/Toniiiio/imageclipr. Hình ảnh sẽ lưu mặc định trong working directory.

2.3 Văn phạm tiếng Anh

Cách sử dụng dấu ba chấm ellipses. https://t.me/c/1605387342/140

Cách chèn âm thanh vào theo cách upload lên github rồi play từ URL. Chưa tìm ra cách play từ source trên hard disk.

Sử dụng package `embedr` https://github.com/mccarthy-m-g/embedr

```
library(embedr)
embed_audio(src = "https://tanduc307.github.io/light/An%20ellipsis%20(plural_%20ellipses)%20is%2
```

2.4 Trích dẫn

Xem hướng dẫn ở đây là làm được https://inbo.github.io/tutorials/tutorials/r _citations_markdown/

2.5 Cú pháp Markdown

Xem ở đây https://www.markdownguide.org/basic-syntax/

Chapter 3

Hello bookdown

All chapters start with a first-level heading followed by your chapter title, like the line above. There should be only one first-level heading (`#`) per .Rmd file.

3.1 A section

All chapter sections start with a second-level (`##`) or higher heading followed by your section title, like the sections above and below here. You can have as many as you want within [**?**] a chapter [**?**].

An unnumbered section

Chapters and sections are numbered by default. To un-number a heading, add a `{.unnumbered}` or the shorter `{-}` at the end of the heading, like in this section.

Chapter 4

Cross-references

Cross-references make it easier for your readers to find and link to elements in your book.

4.1 Chapters and sub-chapters

There are two steps to cross-reference any heading:

1. Label the heading: `# Hello world {#nice-label}`.

    - Leave the label off if you like the automated heading generated based on your heading title: for example, `# Hello world` = `# Hello world {#hello-world}`.
    - To label an un-numbered heading, use: `# Hello world {-#nice-label}` or `{# Hello world .unnumbered}`.

2. Next, reference the labeled heading anywhere in the text using `\@ref(nice-label)`; for example, please see Chapter 4.

    - If you prefer text as the link instead of a numbered reference use: any text you want can go here.

4.2 Captioned figures and tables

Figures and tables *with captions* can also be cross-referenced from elsewhere in your book using `\@ref(fig:chunk-label)` and `\@ref(tab:chunk-label)`, respectively.

See Figure 4.1.

```
par(mar = c(4, 4, .1, .1))
plot(pressure, type = 'b', pch = 19)
```
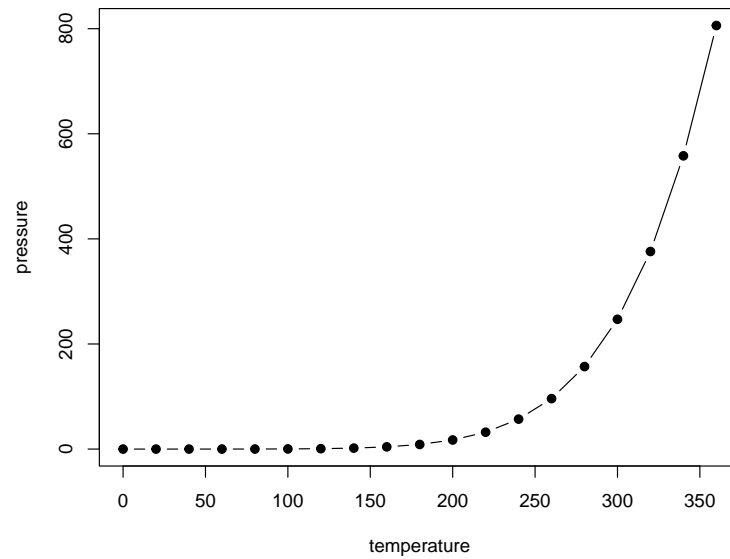
Figure 4.1: Here is a nice figure!

Don't miss Table 4.1.

```
knitr::kable(
  head(pressure, 10), caption = 'Here is a nice table!',
  booktabs = TRUE
)
```

Table 4.1: Here is a nice table!

temperature	pressure
0	0.0002
20	0.0012
40	0.0060
60	0.0300
80	0.0900
100	0.2700
120	0.7500
140	1.8500
160	4.2000
180	8.8000

Chapter 5

Parts

You can add parts to organize one or more book chapters together. Parts can be inserted at the top of an .Rmd file, before the first-level chapter heading in that same file.

Add a numbered part: `# (PART) Act one {-}` (followed by `# A chapter`)

Add an unnumbered part: `# (PART\*) Act one {-}` (followed by `# A chapter`)

Add an appendix as a special kind of un-numbered part: `# (APPENDIX) Other stuff {-}` (followed by `# A chapter`). Chapters in an appendix are prepended with letters instead of numbers.

Chapter 6

Footnotes and citations

6.1 Footnotes

Footnotes are put inside the square brackets after a caret `^[]`. Like this one [1].

6.2 Citations

Reference items in your bibliography file(s) using `@key`.

For example, we are using the **bookdown** package [**?**] (check out the last code chunk in index.Rmd to see how this citation key was added) in this sample book, which was built on top of R Markdown and **knitr** [**?**] (this citation was added manually in an external file book.bib). Note that the `.bib` files need to be listed in the index.Rmd with the YAML `bibliography` key.

The RStudio Visual Markdown Editor can also make it easier to insert citations: https://rstudio.github.io/visual-markdown-editing/#/citations

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[1]This is a footnote.

Chapter 7

Blocks

7.1 Equations

Here is an equation.

$$f(k) = \binom{n}{k} p^k (1-p)^{n-k} \tag{7.1}$$

You may refer to using `\@ref(eq:binom)`, like see Equation (7.1).

7.2 Theorems and proofs

Labeled theorems can be referenced in text using `\@ref(thm:tri)`, for example, check out this smart theorem 7.1.

Theorem 7.1. *For a right triangle, if c denotes the* length *of the hypotenuse and a and b denote the lengths of the **other** two sides, we have*

$$a^2 + b^2 = c^2$$

Read more here https://bookdown.org/yihui/bookdown/markdown-extensions-by-bookdown.html.

7.3 Callout blocks

The R Markdown Cookbook provides more help on how to use custom blocks to design your own callouts: https://bookdown.org/yihui/rmarkdown-cookbook/custom-blocks.html

Chapter 8

Sharing your book

8.1 Publishing

HTML books can be published online, see: https://bookdown.org/yihui/bookdown/publishing.html

8.2 404 pages

By default, users will be directed to a 404 page if they try to access a webpage that cannot be found. If you'd like to customize your 404 page instead of using the default, you may add either a `_404.Rmd` or `_404.md` file to your project root and use code and/or Markdown syntax.

8.3 Metadata for sharing

Bookdown HTML books will provide HTML metadata for social sharing on platforms like Twitter, Facebook, and LinkedIn, using information you provide in the `index.Rmd` YAML. To setup, set the `url` for your book and the path to your `cover-image` file. Your book's `title` and `description` are also used.

This `gitbook` uses the same social sharing data across all chapters in your book—all links shared will look the same.

Specify your book's source repository on GitHub using the `edit` key under the configuration options in the `_output.yml` file, which allows users to suggest an edit by linking to a chapter's source file.

Read more about the features of this output format here:

https://pkgs.rstudio.com/bookdown/reference/gitbook.html

Or use:

```
?bookdown::gitbook
```