Cryptography

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Chapter 1

Overview of cryptographic

1.0.1 Secure Communication!

- Alice need to send a valuable item to Bob through post. However, there is no guarantee that the item will not be stolen while in transit.
- How can Alice and Bob can come up with a secure way to send the item through the post?
 - What is your solution?
 - Can you improve your solution?

What is Cryptography?

Cryptography (cryptology) is the (mathematical) science of techniques for secure communication in the presence of an adversary.

1.1 Substitution ciphers

- 1.2 Cryptographic goals
- 1.3 Basic terminology and concepts
- 1.4 Symmetric-key encryption
- 1.5 Introduction to cryptoanalysis

Chapter 2

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.

2.1 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 3

Cross-references

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

3.1 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 3.
 - If you prefer text as the link instead of a numbered reference use: any text you want can go here.

3.2 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 3.1.

```
par(mar = c(4, 4, .1, .1))
plot(pressure, type = 'b', pch = 19)
```

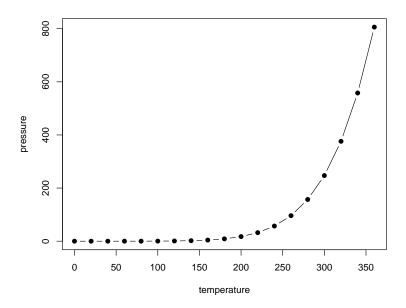


Figure 3.1: Here is a nice figure!

Don't miss Table 3.1.

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

Table 3.1: 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