Tinderbox file for Quarto

How to use this file

fryagbye

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Introduction

This tinderbox file supports creating a book and manuscript (beta) with Quarto.
Tinderbox file for Quarto (Web version)
You can make qmd files and _quarto.yml easily with it. Here is an example of books created with Quarto.

- R for Data Science (2e)(Wickham and Grolemund (2016))

My Workflow is Figure 1.

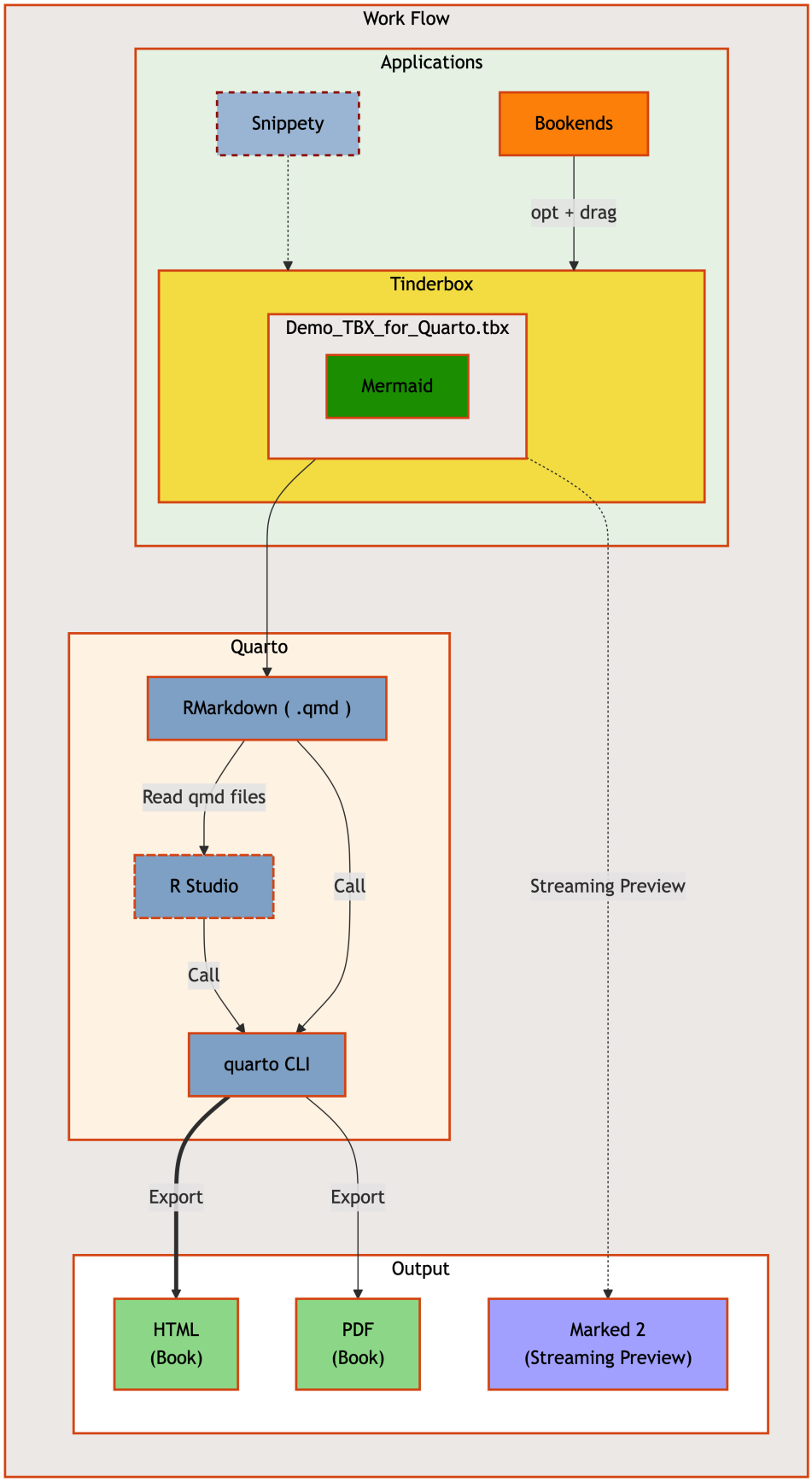


Figure1: Tinderbox Work Flow with Quarto.

Chapter 1

Usage environment

Please refer to the output results of `quato check`.

- quarto is using the released version 1.5.57.
- R is version 4.4.0
- I use luaLatex for output in Japanese. I have installed MacTex because TinyTex doesn't include it.
- It may be better to uninstall TinyTex.
- I have set it to use `lightbox` extension (included in Quarto v1.4+.)

`quarto check` output

```
# Quarto check output
Quarto 1.5.57
[✓] Checking versions of quarto binary dependencies...
      Pandoc version 3.2.0: OK
      Dart Sass version 1.70.0: OK
      Deno version 1.41.0: OK
      Typst version 0.11.0: OK
[✓] Checking versions of quarto dependencies......OK
[✓] Checking Quarto installation......OK
      Version: 1.5.57
      Path: /Applications/quarto/bin

[✓] Checking tools.....................OK
      TinyTeX: (not installed)
      Chromium: (not installed)

[✓] Checking LaTeX.....................OK
      Using: Installation From Path
      Path: /usr/local/texlive/2024/bin/universal-darwin
      Version: 2024

[✓] Checking basic markdown render....OK

[✓] Checking Python 3 installation....OK
      Version: 3.12.7
      Path: ~/github/tinderboxwithquarto/.venv/bin/python3
      Jupyter: 5.7.2
      Kernels: python3

[✓] Checking Jupyter engine render....OK

[✓] Checking R installation...........OK
      Version: 4.4.0
      Path: /Library/Frameworks/R.framework/Resources
```

```
      LibPaths:
        - /Library/Frameworks/R.framework/Versions/4.4-arm64/Resources/library
      knitr: 1.46
      rmarkdown: 2.26

[✓] Checking Knitr engine render......OK
```

1.1 RStudio Session information

```
#| echo: false
sessionInfo()
```

Platform: aarch64-apple-darwin20 Running under: macOS 15.1.1
Matrix products: default BLAS: /System/Library/Frameworks/Accelerate.framework/Versions/A/Frameworks/vecLib.framework/Versions/A/libBLAS.dylib LAPACK: /Library/Frameworks/R.framework/Versions/4.4-arm64/Resources/lib/libRlapack.dylib; LAPACK version 3.12.0
locale: [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
time zone: Asia/Tokyo tzcode source: internal
attached base packages: [1] stats graphics grDevices utils datasets methods base
loaded via a namespace (and not attached): [1] compiler_4.4.0 tools_4.4.0

1.2 Installed packages

```
#| echo: false
#| message: false
pacman::p_load(tidyverse, gt)
installed.packages() |>
  as_tibble() |>
  select(Package, Version, Built) |>
  gt::gt()
```

Package List

Name	Version	Built
askpass	1.2.0	4.4.0
backports	1.4.1	4.4.0
base	4.4.0	4.4.0
base64enc	0.1-3	4.4.0
bigD	0.2.0	4.4.0
bit	4.0.5	4.4.0
bit64	4.0.5	4.4.0
bitops	1.0-7	4.4.0
blob	1.2.4	4.4.0
boot	1.3-30	4.4.0
brew	1.0-10	4.4.0
brio	1.1.5	4.4.0
broom	1.0.5	4.4.0
bslib	0.7.0	4.4.0
cachem	1.0.8	4.4.0
callr	3.7.6	4.4.0
cellranger	1.1.0	4.4.0
class	7.3-22	4.4.0

Name	Version	Built
cli	3.6.2	4.4.0
clipr	0.8.0	4.4.0
cluster	2.1.6	4.4.0
codetools	0.2-20	4.4.0
collections	0.3.7	4.4.0
colorspace	2.1-0	4.4.0
commonmark	1.9.1	4.4.0
compiler	4.4.0	4.4.0
conflicted	1.2.0	4.4.0
cpp11	0.4.7	4.4.0
crayon	1.5.2	4.4.0
curl	5.2.1	4.4.0
cyclocomp	1.1.1	4.4.0
data.table	1.15.4	4.4.0
datasets	4.4.0	4.4.0
DBI	1.2.2	4.4.0
dbplyr	2.5.0	4.4.0
desc	1.4.3	4.4.0
digest	0.6.35	4.4.0
downlit	0.4.3	4.4.0
dplyr	1.1.4	4.4.0
dtplyr	1.3.1	4.4.0
ellipsis	0.3.2	4.4.0
evaluate	0.23	4.4.0
fansi	1.0.6	4.4.0
farver	2.1.1	4.4.0
fastmap	1.1.1	4.4.0
fontawesome	0.5.2	4.4.0
forcats	1.0.0	4.4.0
foreign	0.8-86	4.4.0
fs	1.6.4	4.4.0
gargle	1.5.2	4.4.0
generics	0.1.3	4.4.0
ggplot2	3.5.1	4.4.0
gitcreds	0.1.2	4.4.0
glue	1.7.0	4.4.0
googledrive	2.1.1	4.4.0
googlesheets4	1.1.1	4.4.0
graphics	4.4.0	4.4.0
grDevices	4.4.0	4.4.0
grid	4.4.0	4.4.0
gt	0.10.1	4.4.0
gtable	0.3.5	4.4.0
gtExtras	0.5.0	4.4.0
haven	2.5.4	4.4.0
highr	0.10	4.4.0
hms	1.1.3	4.4.0
htmltools	0.5.8.1	4.4.0
htmlwidgets	1.6.4	4.4.0
httr	1.4.7	4.4.0
ids	1.0.1	4.4.0
isoband	0.2.7	4.4.0
jquerylib	0.1.4	4.4.0
jsonlite	1.8.8	4.4.0

Name	Version	Built
juicyjuice	0.1.0	4.4.0
kableExtra	1.4.0	4.4.0
KernSmooth	2.23-22	4.4.0
knitr	1.46	4.4.0
labeling	0.4.3	4.4.0
languageserver	0.3.16	4.4.0
lattice	0.22-6	4.4.0
lazyeval	0.2.2	4.4.0
lifecycle	1.0.4	4.4.0
lintr	3.1.2	4.4.0
lubridate	1.9.3	4.4.0
magrittr	2.0.3	4.4.0
markdown	1.12	4.4.0
MASS	7.3-60.2	4.4.0
Matrix	1.7-0	4.4.0
memoise	2.0.1	4.4.0
methods	4.4.0	4.4.0
mgcv	1.9-1	4.4.0
mime	0.12	4.4.0
modelr	0.1.11	4.4.0
munsell	0.5.1	4.4.0
nlme	3.1-164	4.4.0
nnet	7.3-19	4.4.0
nvimcom	0.9.42	4.4.0
openssl	2.1.2	4.4.0
pacman	0.5.1	4.4.0
paletteer	1.6.0	4.4.0
parallel	4.4.0	4.4.0
pillar	1.9.0	4.4.0
pkgbuild	1.4.4	4.4.0
pkgconfig	2.0.3	4.4.0
pkgload	1.3.4	4.4.0
prettyunits	1.2.0	4.4.0
prismatic	1.1.2	4.4.0
processx	3.8.4	4.4.0
progress	1.2.3	4.4.0
ps	1.7.6	4.4.0
purrr	1.0.2	4.4.0
R.cache	0.16.0	4.4.0
R.methodsS3	1.8.2	4.4.0
R.oo	1.26.0	4.4.0
R.utils	2.12.3	4.4.0
R6	2.5.1	4.4.0
ragg	1.3.0	4.4.0
rappdirs	0.3.3	4.4.0
RColorBrewer	1.1-3	4.4.0
Rcpp	1.0.12	4.4.0
reactable	0.4.4	4.4.0
reactR	0.5.0	4.4.0
readr	2.1.5	4.4.0
readxl	1.4.3	4.4.0
rematch	2.0.0	4.4.0
rematch2	2.1.2	4.4.0
remotes	2.5.0	4.4.0

Name	Version	Built
reprex	2.1.0	4.4.0
rex	1.2.1	4.4.0
rlang	1.1.3	4.4.0
rmarkdown	2.26	4.4.0
roxygen2	7.3.1	4.4.0
rpart	4.1.23	4.4.0
rprojroot	2.0.4	4.4.0
rstudioapi	0.16.0	4.4.0
rvest	1.0.4	4.4.0
sass	0.4.9	4.4.0
scales	1.3.0	4.4.0
selectr	0.4-2	4.4.0
spatial	7.3-17	4.4.0
splines	4.4.0	4.4.0
stats	4.4.0	4.4.0
stats4	4.4.0	4.4.0
stringi	1.8.3	4.4.0
stringr	1.5.1	4.4.0
styler	1.10.3	4.4.0
survival	3.5-8	4.4.0
svglite	2.1.3	4.4.0
sys	3.4.2	4.4.0
systemfonts	1.0.6	4.4.0
tcltk	4.4.0	4.4.0
textshaping	0.3.7	4.4.0
tibble	3.2.1	4.4.0
tidyr	1.3.1	4.4.0
tidyselect	1.2.1	4.4.0
tidyverse	2.0.0	4.4.0
timechange	0.3.0	4.4.0
tinytex	0.50	4.4.0
tools	4.4.0	4.4.0
tzdb	0.4.0	4.4.0
utf8	1.2.4	4.4.0
utils	4.4.0	4.4.0
uuid	1.2-0	4.4.0
V8	4.4.2	4.4.0
vctrs	0.6.5	4.4.0
viridisLite	0.4.2	4.4.0
vroom	1.6.5	4.4.0
withr	3.0.0	4.4.0
xfun	0.43	4.4.0
xml2	1.3.6	4.4.0
xmlparsedata	1.0.5	4.4.0
yaml	2.3.8	4.4.0

Chapter 2

Setting

1. Setting up with “TBXConfig” note
   You need to change values of the following “TBXConfig” attributes for configuration.

- `$Indent_Charactor` -> Set the symbol that represents the depth of indentation. (default value = ★)
- `$ExList` -> List of notes excluded from cross-reference search (default value = “List and Agent etc”)
- `$ExportFolder` -> Path of exported files. (for Stamp “Move qmd files”)
- `$ToggleTOC` -> Toggle for Generating TOC. (default value = false) You can use quarto option for TOC in _quarto.yml.
- `$Q_TableOfContainsNote` -> **$Name** of TOC note. (default value = Table of Contents)
- `$Rename_in` -> Setting for translating a label. (default value = ja:en)
- `$Q_PDFEngine` -> Setting for pdf engine This file is tested only with lualatex. (default value = lualatex)
- `$ManuscriptOutlineBaseControl` -> Adjustment of section levels in Markdown. (default = 1)
  e.g. $ManuscriptOutlineBaseControl = 0 -> ## Title

$ManuscriptOutlineBaseControl = 1 -> # Title

2. Making a `_quarto.yml`
   You can change values of attributes of “_quarto” note to change quarto options. The quarto options are attributes that starts with “Q” in this file. The initial setting specified in `_quarto.yml` is for Japanese output.
   Please refer Quarto Book Structure and PDF Basics in detail.
   If you use Custom Translations, you need to make `$Q_Has_Language_YML true` and set `$Q_Language_YML` for the filename. “_language” note in this file is for translating to japanese.
3. Changing `_common.R` file. (optional)
   You can set up `knitr` package options for R chunk.

Part I

Book format

Chapter 3

Make notes

Manuscript has a only one qmd file. The qmd file name is set in _quarto.yml (_quarto_manuscript).

3.1 Front Matter and Subnote

1. pFrontmatterManuscript
   This is a qmd file that contains a Front Matter. When you export, it has contents of descendants.

you can set data for author(s) with the path of note that has pAuther notes. (like Authors)
`$IsManuscript = true`

2. pSubnoteManuscript
   This is a dammy file for pFrontmatterManuscript. markdown level depends on indent level and `$ManuscriptOutlineBaseControl` of TBXConfig.

```
"#" * ($OutlineDepthBase - $ManuscriptOutlineBaseControl("TBXConfig")
```

`$IsManuscript = true`

Chapter 4

Rename HTMLExportFileName of a note with translation

There is a stamp **“Notes: Tranlate Section Labels”** that translates the Japanese title (`$Name`) into English and automatically sets `$HTMLExportFileName` [*1]. and you can sets `$SectionLabel` with stamp “Set: Section Label”. The labels of the section cannot be duplicated, so please modify them manually if necessary. In addition, you can change the language to be translated with `$Rename_in` in the TBX configuration note (**TBXConfig**). (By default, from Japanese to English).

[*1] Translate-shell installation required.

```
>brew install translate-shell
```

Chapter 5

Part in Book format

For Part, please refer to Quarto's "Book Structure" reference.

pNote is compatible with quarto's **Part** or **Chapter**.

If pNote is at the bottom of pNote, the top pNote will be Part (Part ○), and the lower pNote will be Chapter (Chapter ○). You can place pNote at hierarchical level 2 only if you are under pNote of hierarchy level 1. In this case, the hierarchy level and header level are one different, so the header level is set based on the user attribute `$OutlineDepthBase`.

pNote, which is treated as a Part, is turned on (`true`) for `$Is_Part_qmd`. The lower pNote contains the export file name (e.g. filename.qmd) of the pNote, which is Part, in `$Part_file`. If a Part note is empty, only the title (`$Name`) of the note is reflected in _quarto.yml, as shown in the **"Dice"** in the example below. If the dice.qmd is not empty, the part title (as a level one header) as well as some introductory content for the part.

```
#_quarto.yml
chapters:
  - index.qmd
  - preface.qmd
  - part: "Dice" # if $Text("Dice").wordCount == 0
  chapters:
    - basics.qmd
    - packages.qmd
```

```
#_quarto.yml
chapters:
  - index.qmd
  - preface.qmd
  - part: dice.qmd # if $Text("Dice").wordCount >0
    chapters:
      - basics.qmd
      - packages.qmd
```

The figure below shows the export example when Part is supported and the output result of _quarto.yml.

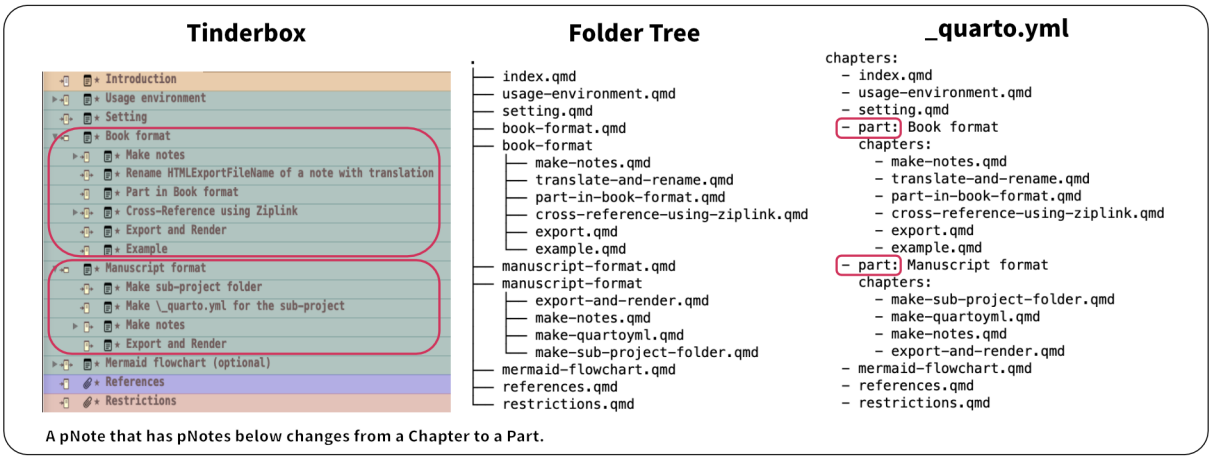


Figure5.1: Folder configuration at the time of output and _quarto.yml

Chapter 6

Cross-Reference using Ziplink

In Quarto, labeled diagrams, tables, etc. can be mutually quoted. Automatically (or manually) collect some labels in the **Tinderbox** file at the bottom of the **Reference List** note.[*1] Convert it to a quoteable title (citation name starting with @) and create a note for the corresponding part. **Tinderbox**'s **Ziplink** function [*2] is a function for easily pasting links to notebooks. It is diverted to make it easy to enter the quoted name. This makes it relatively easy to find and enter the quoted label even if the number increases.。

6.1 How to set the label of the diagram

6.1.1 R chunk

Automatically recognize and collect R chunk labels in the following format (#| label: fig-xxx-ooo, etc.). The method of specifying a label in the curly bracket ({r fig-xxx-ooo}) is not supported. In the following example, you can quote **@fig-airquality**.

```
#| label: fig-airquality
#| fig-cap: "Temperature and ozone level."
#| warning: false

library(ggplot2)

ggplot(airquality, aes(Temp, Ozone)) +
  geom_point() +
  geom_smooth(method = "loess")
```

[*1] The diagrams and tables are extracted in regular expressions.

[*2] Please refer to "Text link creation via the Ziplinking method" in A Tinderbox Reference File.(Anderson (2024))

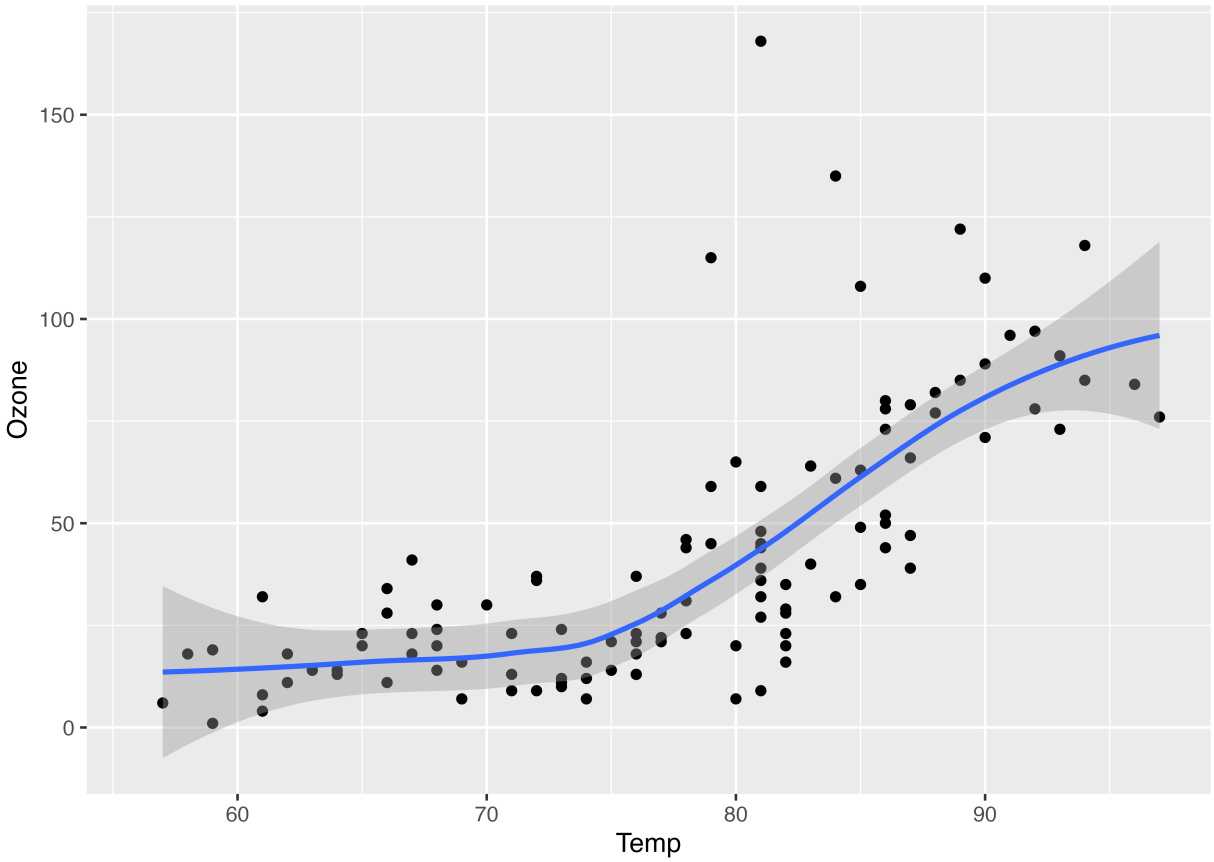


Figure6.1: label: @fig-airquality

6.1.2 Image link in markdown format

Recognize and collect labels in format that extend the markdown.

```
![Test image](screenshots/toolbar.png){#fig-test fig-alt="test" fig-align="left" width=100%}
```

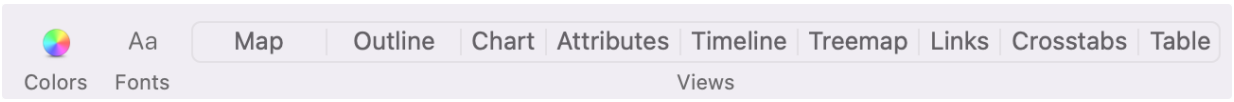


Figure6.2: label:Figure 6.2

6.2 How to set the label of the table

There are multiple ways to specify labels, but they are only supported if it is a table in markdown format and the label name is above, as shown in the example below.[*3]

```
: 明度・彩度の修飾子 {#tbl-brightness-saturation}

|項目|効果|
|----|------------|
|dark|暗くする|
```

[*3] For other formats, please refer to quarto cross-reference.

```
|darker|より暗くする|
|darkest|最も暗くする|
|light| 明るくする|
```

6.3 Equations

Equation Example

Black-Scholes (Equation 6.1) is a mathematical model that seeks to explain the behavior of financial derivatives, most commonly options:

$$\frac{\partial \mathrm{C}}{\partial \mathrm{t}} + \frac{1}{2}\sigma^2 \mathrm{S}^2 \frac{\partial^2 \mathrm{C}}{\partial \mathrm{S}^2} + \mathrm{rS}\frac{\partial \mathrm{C}}{\partial \mathrm{S}} = \mathrm{rC} \tag{6.1}$$

6.4 How to quote

If you enter two square brackets "[[", the list will be displayed, so please enter a part of the label name. As the candidates are narrowed down, select the citation label you want to enter.

Types of quotations	Lable	Quote
Chapters, Sections etc.	#sec-	@sec-
Figures	#| label:	@fig-
Charts	#tbl-	@tbl-
Equations	#eq-	@eq-

6.5 Restrictions on quoted labels

- The label before change or deletion remains because it cannot be detected even if the quoted label name is changed or deleted.
- Cross-ref detection is carried out by regular execution. If it is executed in the middle of input, it will be duplicated with a short label.

In this case, if necessary, delete the quoted label name in Stamp and perform the detection manually by following the steps below.

1. Labels: Clear Cross-Reference List（Delete all citation labels under the Reference List.）
2. Labels: Make Cross-Reference List（Re-detect the quoted label.）

6.6 Dummy links for cross-reference

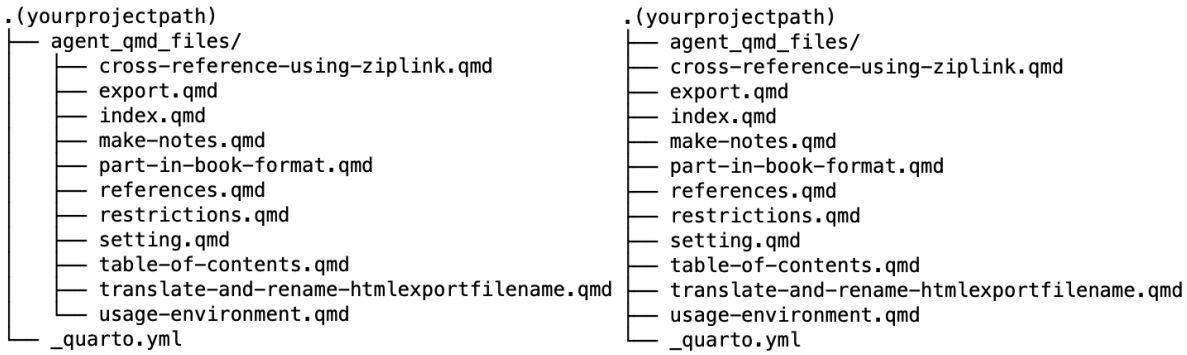
You can create dummy links showing where each cross-reference, starting with the @ symbol in the section, figure, and table label lists, is cited.

1. execute "Labels: Make Dummy Link Data For Cross-Reference" stamp
2. select cross-ref label notes (start with "@") and execute "Labels: Dummy Link between Reference and Selected notes" stamp.

Chapter 7

Export and Render

1. Export `_quarto.yml`
   You can change output format “pdf” or “html” with the stamp “Change quarto.yml template”. If you use a _language.yml, you export “_language” note (optional. See Chapter 2 Setting)
2. Export `.qmd` files (pNote notes only)
   The pSubnote at the bottom of pNote at the time of output is all output as one qmd file in the state contained when pNote is exported. Therefore, it is OK to export by selecting only pNote to output. In addition, pSubnote does not require output, but if you export, it is set to output as a text file (extension .txt).
   If you select the pNote notes below “For Export” and output it (Figure 7.1a), then execute the “Move qmd files” stamp, you can move (or overwrite) the qmd file directly to the export(project) folder (Figure 7.1b) . This is a method to avoid having to consider the folder structure when referencing image files with a relative path.



(a) Before (b) After

Figure7.1: qmd files are moved to project path by stamp

3. preview html output.(optional)

```
# preview for only html output
> quarto preview index.qmd --to html --no-watch-inputs --no-browse
```

4. render pdf or html.

```
> quarto render
```

you can use RStudio for preview and render.

Chapter 8

Example

Example PDF

Part II

Manuscript format

Chapter 9

Make sub-project folder

Make a note for sub-project with **pSubfolderManuscript** like this (_quarto_manuscript).

Chapter 10

Make _quarto.yml for the sub-project

you have to set a qmd file name. manuscript has only one qmd file.

Chapter 11

Make notes

Manuscript has a only one qmd file. The qmd file name is set in _quarto.yml (_quarto_manuscript).

11.1 Front Matter and Subnote

1. pFrontmatterManuscript
   This is a qmd file that contains a Front Matter. When you export, it has contents of descendants.

you can set data for author(s) with the path of note that has pAuther notes. (like Authors)
`$IsManuscript = true`

2. pSubnoteManuscript
   This is a dammy file for pFrontmatterManuscript. markdown level depends on indent level and `$ManuscriptOutlineBaseControl` of TBXConfig.

```
"#" * ($OutlineDepthBase - $ManuscriptOutlineBaseControl("TBXConfig")
```

`$IsManuscript = true`

Chapter 12

Export and Render

1. Export You have to export _quarto.yml (_quarto_manuscript) and one qmd (main) in sub-project folder.
2. Activate a virtual environment if you use a virtual environment, activate it.

e.g.

```
poetry shell
```

3. Render sub-project

```
# quarto render "your project name"
quarto render myproject

# For preview
quarto preview myproject --to html --no-watch-inputs --no-browse
```

Chapter 13

Mermaid flowchart (optional)

This file can generate Mermaid flowchart from notes, links.

- Container notes -> Subgraphs (pMFSubgraph)
- Non Container notes -> Nodes (pMFNode)

Work Flow is a sample of Mermaid flowchart.
Please check it in Map view.

13.1 How to use

1. You make a container noto for Flowchart and set pMFContainer.
2. You make notes (pMFNode) and links.
3. You choose a direction for drawing like TD or LR.($M_Direction)
4. Run the stamp (`Mermaid: Make a Flowchart`).
5. Prototypes of container notes **has** a child note change from pMFNodeto pMFContainer automatically by the stamp.
6. The note (pMFContainer) has the code for mermaid flowchart.

13.2 Supported shapes

- rectangle (<- normal and other shapes)
- rounded
- oval
- ozenge
- diamond
- hex

13.3 Supported line types (Priority)

- normal –> (4th)
- bold ==> (3rd)
- dotted -.-> (2nd)
- invisible ~~~ (1st)

13.4 Supported arrow types

- arrow only

13.5 Example

Figure 1

Chapter 14

References

Anderson, Mark. 2024. “A Tinderbox Reference File.” 2024.
Wickham, Hadley, and Garrett Grolemund. 2016. *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*. “O’Reilly Media, Inc.”

AppendixA

Restrictions

It seems that the section label customization function cannot be used in the latest release ref. Cross-references on unnumbered pages fail (PDF) or are mislabeled (HTML).

If you turn on `$IsUnnumbered` and `$HasSectionLabel`, the display of the quote will be fixed to the number + title, so please turn off `$IsUnnumbered`.

Please do not use parentheses in note titles.The section label list is not being generated correctly.