Tinderbox file for Quarto

How to use this file

fryagbye

Table of contents

Introduction		5
Chapter 1 1.1 1.2	Usage environment RStudio Session information	7 8 8
Chapter 2	Setting	13
Part I Boo	k format	15
Chapter 3 3.1	Make notes Front Matter and Subnote	17 17
Chapter 4	Rename HTMLExportFileName of a note with translation	19
Chapter 5	Part in Book format	21
Chapter 6 6.1 6.2 6.3 6.4 6.5 6.6	Cross-Reference using Ziplink How to set the label of the diagram How to set the label of the table Equations	23 23 24 25 25 25 25
Chapter 7	Export and Render	27
Chapter 8	Example	29
Part II Mai	nuscript format	31
Chapter 9	Make sub-project folder	33
Chapter 10	Make _quarto.yml for the sub-project	35
Chapter 11 11.1	Make notes Front Matter and Subnote	37 37
Chapter 12	Export and Render	39
Chapter 13 13.1 13.2 13.3 13.4 13.5	Mermaid flowchart (optional) How to use	41 41 41 41 41 41

4		Table of cont	ents
	13.6	Limitation	42
	Chapter 14	References	43
	Chapter 15	Restrictions	45

Introduction

This tinderbox file supports creating a book and manuscript (beta) with Quarto.

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.

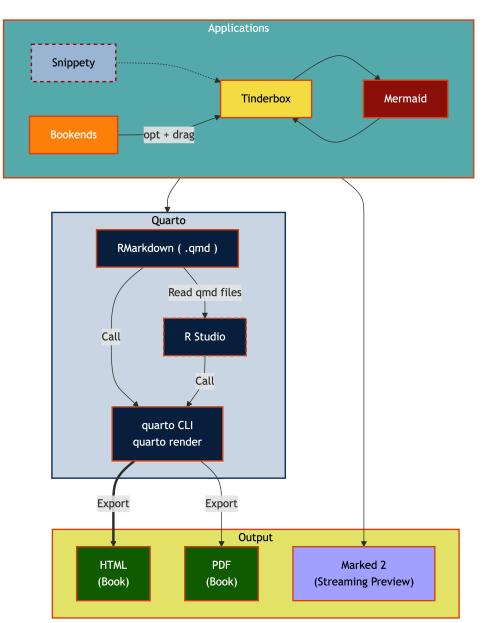


Figure 1: Tinderbox Work Flow with Quarto.

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
[\checkmark] 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
[\checkmark] 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.....0K
```

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

 $locale: [1] \ en_US.UTF-8/en$

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
$_{ m bigD}$	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

n. T.	***	D 11
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
y a 1111	4.9.0	4.4.0

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. <math>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 $_\texttt{common.R}$ file. (optional)

You can set up knitr package options for R chunk.

Part I Book format

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

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.

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 \bigcirc), and the lower pNote will be Chapter (Chapter \bigcirc). 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.

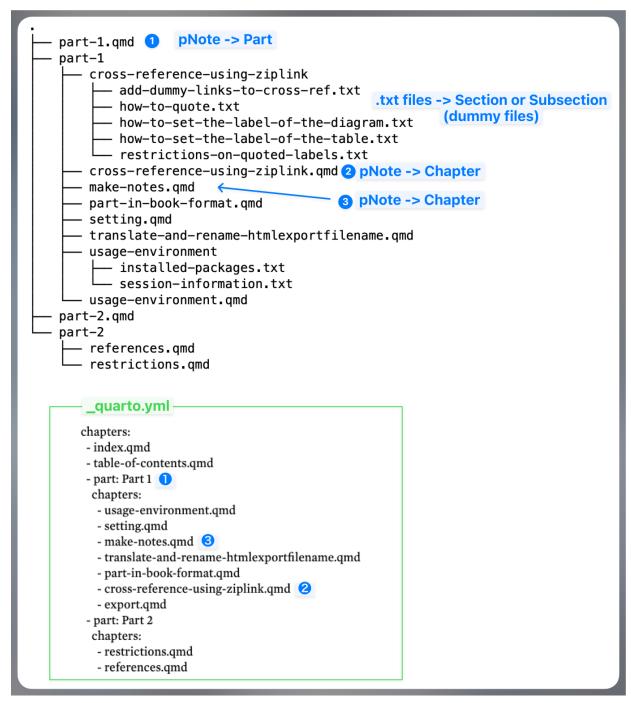


Figure 5.1: Folder configuration at the time of output and _quarto.yml

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 \text{ 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))

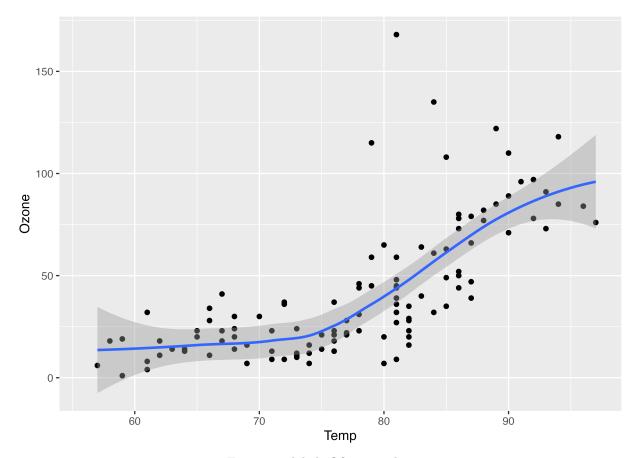


Figure 6.1: label: @fig-airquality

6.1.2 Image link in markdown format

Recognize and collect labels in format that extend the markdown.

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

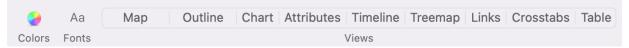


Figure 6.2: label:Figure 6.2

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

 $^{^{*3}}$ For other formats, please refer to quarto cross-reference.

6.3 Equations 25

|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:

$$\frac{\partial C}{\partial t} + \frac{1}{2}\sigma^2 S^2 \frac{\partial^2 C}{\partial S^2} + rS \frac{\partial C}{\partial S} = rC$$
(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.

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 and files" stamp, you can move (or everywrite) the and file directly to the export (project)

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.

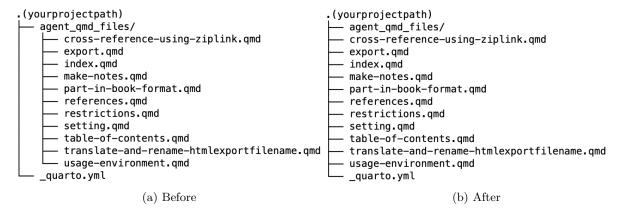


Figure 7.1: qmd files are moved to project path by stamp

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.

Example

Example PDF

Part II Manuscript format

Make sub-project folder

Make a note for sub-project with ${f pSubfolderManuscript}$ like this ($_{{\tt quarto}_{\tt manuscript}}$).

Make _quarto.yml for the sub-project

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

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

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
```

Mermaid flowchart (optional)

This file can generate Mermaid flowchart from notes, links and adornments.

Work Flow is a sample of Mermaid flowchart.

Please check it in Map view.

13.1 How to use

- 1. You make a container and set pMermaidContainer.
- 2. You make notes (pMermaid) and links. if you want to make a subgraph, make a adorment (pMermaidAdorments)
- 3. You choose a direction for drawing like TD or LR.(\$M_Direction)
- 4. run stamp (Mermaid: Make a Flowchart).
- 5. pMermaidContainer has the code for mermaid flowchart.

13.2 Subgraph support (by Adornments)

This is controlled by \$OnAdd and \$OnRemove of Adornments. if you delete or move adornment without running \$OnRemove for all notes, you need to fix a value of \$M_Subgraph and \$M_adornments.

13.3 Supported shapes

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

13.4 Supported line types (Priority)

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

13.5 Supported arrow types

• arrow only

13.6 Limitation

Notes with the same name will not be reflected correctly. It is not perfect, so please fix the generated code as you needed.

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."

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.