Book Template

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MIT

Write beautiful scientific book or thesis with Typst

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This Typst package is a proposed template for writing thesis dissertations, French habilitations, or scientific books.

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Part I

Usage

I.1 Using bookly

To use the bookly template, you need to include the following line at the beginning of your typ file:

```
#import "@preview/bookly:0.1.0": *
```

I.2 Initializing the template

After importing bookly, you have to initialize the template by a show rule with the #bookly command. This function takes an optional argument to specify the title of the document.

```
#show: bookly.with(
  )
#bookly(
  (title): "Title",
  (author): "Author Name",
  (theme): "fancy",
  (layout): "standard",
  (lang): "fr",
  (fonts): "default-fonts",
  (colors): "default-colors",
  (title-page): none
) [body]
   Argument –
   (title): "Title"
                                                                                str
     Title of the book or the thesis.

Argument —

   (author): "Author Name"
                                                                                str
     Author of the book.
```

```
Argument —

(theme): "fancy"
                                                                          function
 Theme of the document. Possible values are:
 • fancy (default)
 modern
 • classic
- Argument —
(layout): "standard"
                                                                               str
 Layout of the document. Possible values are:
 • "standard" (default)
 • "tufte"
– Argument –
(lang): "fr"
                                                                               str
 Language of the document.
 Supported languages French ("fr"- default) and English ("en")
– Argument -
(fonts): "default-fonts"
                                                                        dictionary
 Fonts used in the document. It contains the following keys:
 • body str - Font used for the body text (default: "New Computer Modern")
 • math str - Font used for mathematical equations (default: "New Computer Modern
   Math")
 • raw str - Font used for raw text (default: "DejaVu Sans Mono")
– Argument –
(title-page): none
                                                                           content
 Content of the title page.
Argument —
(colors): "default-colors"
                                                                        dictionary
 Colors used in the document. It contains the following keys:
 • primary color (default: rgb("#c1002a"))
 • secondary color - Secondary color (default: rgb("#dddddd").darken(15%))
 • boxeq color - Color of equation boxes (default: rgb("#ddddd"))
 • header color - Color used for adapting the color of the document headers (default:
   black)
```

I.2.1 Initialization example

```
#show: bookly.with(
  author: "Author Name",
  fonts: (
    body: "Lato",
    math: "Lete Sans Math"
  ),
  theme: modern,
  lang: "en",
  logo: image("path_to_image/image.png")
)
```

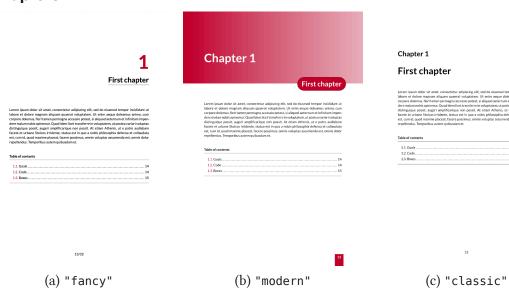
I.2.2 Themes gallery

Parts

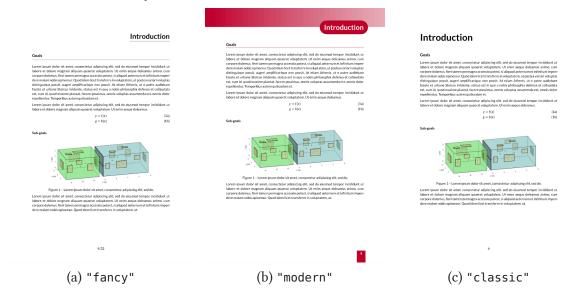


(a) "fancy" (b) "modern" (c) "classic"

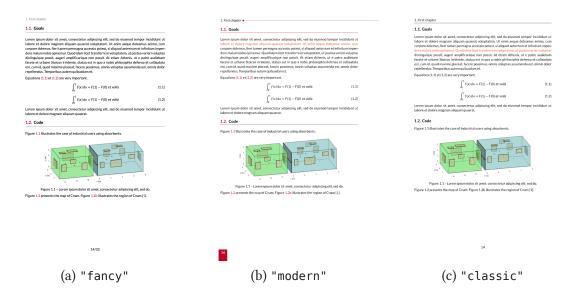
Chapters



Unnumbered chapters



Sections

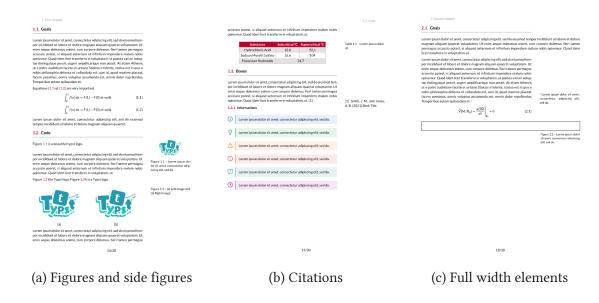


I.2.3 Layout

The template currently supports two layouts: standard and tufte.

The standard layout is the default layout, with symmetric margins. It is the most common layout for books and theses. Some examples of the standard layout are presented in Section I.2.2 "Themes gallery".

The tufte layout is inspired by the works of Edward Tufte, which emphasizes simplicity and clarity, often using wide margins for notes and figures. It is particularly suitable for books or theses that require extensive annotations or side comments. To implement the tufte layout, the template comes with several helper functions, implementing side notes, side figures, full width blocks, etc. (see Section III.7 for details). Some examples of the tufte layout are presented below.



Part II

Book content

The content of the book should be written in the main typ file or in additional files. The template provides a basic structure for writing a book.

In general, the section of the main file corresponding to the book content is structured as follows:

```
#show: front-matter

#include "front-content.typ"

#show: main-matter

#tableofcontents

#listoffigures

#listoftables

#part("Main body")

#include "chapter.typ"

#bibliography("bibliography.bib")

#show: appendix

#part("Document appendices")

#include "appendix.typ"
```

The content of the thesis is divided into three main sections: front-matter, main-matter, and appendix. These elements are accompanied by additional functions to facilitate writing.

II.1 Environments

The template provides three environments to structure the thesis content:

1. **front-matter**: environment for preliminary content (cover page, abstract, acknowledgments, etc.). Pages are numbered with Roman numerals and chapters are not numbered. To activate this environment, insert the following command in the main typ file at the desired location:

II Book content II.1 Environments

```
#show: front-matter
```

2. **main-matter**: environment for the main content (introduction, tables of contents, chapters, conclusion, bibliography, etc.). Pages and chapters are numbered with Arabic numerals. To activate this environment, insert the following command in the main typ file at the desired location:

```
#show: main-matter
```

3. **appendix**: environment for the appendices. Pages are numbered with Roman numerals and chapters are numbered with letters. To activate this environment, insert the following command in the main typ file at the desired location:

```
#show: appendix
```

II.2 Parts and chapters

To structure the book content, you can define parts using the **#part** function. To insert a new part, use the following command:

```
#part("Part title")
```

Despite chapters can be defined using the standard Typst markup language. This template defined a fonction #chapter that allows to avoid boilerplate code, such as the manual inclusion of standard elements like title, abstract, and minitoc.

```
#chapter((title), (abstract): none, (toc): true, (numbered): true)[body]
```

```
Argument (title) str

Chapter title.
```

```
Argument (abstract): none content

Summary displayed below the chapter title.
```

```
Argument (toc): true bool
```

Indicates whether a mini table of contents should be displayed at the beginning of the chapter.

```
Argument (numbered): true bool

Indicates whether the chapter should be numbered.
```

```
#chapter(
   "First chapter",
   abstract: lorem(20),
   )[
     // Content of the chapter
]
```

If you use a *.typ file for each chapter, you can type at the top of the file the following code.

```
#show: chapter.with("First chapter", abstract: lorem(20), toc: true)
// Content of the chapter
== First section
```

For unnumbered chapters, you can simply use the #chapter-nonum function. This function assumes that you have a *.typ file per chapter.

```
#show: chapter-nonum

// Content of the chapter
= Chapter title
```

II.3 Tables of contents

The template defines several commands to facilitate the creation of tables of contents:

- #tableofcontents : Table of contents
- #listoffigures : List of figures
- #listoftables : List of tables

A mini table of contents is automatically generated automatically by using the command #minitoc in a chapter. This function is a wraper of the #suboutline function provided by the suboutline package.

Part III

Helper functions

III.1 Figure captions

The package include the command #ls-caption to manage long and short captions for figures and tables. Short caption are displayed in the list of figures or tables, while long captions are used in the main text and in the table of contents.

```
#figure(
  rect(),
  caption: ls-caption("Long caption", "Short caption")
)
```

The code of the command #ls-caption comes from the Typst book¹ by Sitandr.

III.2 Subfigures

In general, figures are inserted into the document using the #figure function from Typst. However, Typst currently does not provide mechanisms for handling subfigures (numbering and referencing). To address this limitation, the template includes a #subfigure function that manages subfigures appropriately. This function wraps the #subpar.grid function from the subpar package.

```
#subfigure(
  figure(image("imagel.png"), caption: []),
  figure(image("image2.png"), caption: []), <b>,
  columns: (lfr, lfr),
  caption: [Figure title],
  label: <fig:subfig>,
)
```

The example above shows a figure composed of two subfigures. The first subfigure has a caption, while the second has a label but no title. The second subfigure can be referenced in the text using the command @b.

 $^{^1}https://sitandr.github.io/typst-examples-book/book/snippets/chapters/outlines.html?highlight=long\#long-and-short-captions-for-the-outline$

III.3 Equations

To highlight an important equation, use the #boxeq function.

```
$
    #boxeq[$p(A|B) prop p(B|A) space p(A)$]
$
```

To create an equation without numbering, use the #nonumeq function.

```
#nonumeq[\frac{0^1 f(x)}{dif x} = F(1) - F(0)
```

III.4 Information boxes

The template provides several types of boxes to highlight different kinds of content:

- #info-box for remarks;
- #tip-box for tips;
- #warning-box for warnings;
- #important-box for important information;
- #proof-box for proofs;
- #question-box for questions.

```
#info-box[#lorem(10)]
#tip-box[#lorem(10)]
#warning-box[#lorem(10)]
#important-box[#lorem(10)]
#proof-box[#lorem(10)]
#question-box[#lorem(10)]
```

The appearance of the boxes depends on the selected theme (see the "Themes gallery" section).

The information boxes described above are built using the #custom-box function, which allows you to create custom boxes. This generic function takes the following parameters:

```
#custom-box((title): none, (icon): "info", (color): rgb("#1d90d0"))[body]

Argument
(title): none

Name of the box.

Argument
(icon): "info"

str
```

```
Name of the icon to display in the box.

Available icons are:

• ⚠ : "alert"

• ② : "info"

• ② : "question"

• ☑ : "report"

• ① : "stop"

• ② : "tip"

Argument

(color): rgb("#ld90d0")

Box color.
```

III.5 Title pages

The template provides two functions to create title pages: one for a book and one for a thesis:

```
#book-page-title(
  (subtitle): "Book subtitle",
  (edition): "First edition",
  (institution): "Institution",
  (series): "Discipline",
  (year): "2024",
  (cover): none,
  (logo): none
) [body]

Argument —

   (subtitle): "Book subtitle"
                                                                                str
     Subtitle of the book.

Argument —

   (edition): "First edition"
                                                                                str
     Edition of the book.

Argument —

   (institution): "Institution"
                                                                                str
     Name of the institution.
```

III Helper functions III.5 Title pages

```
Argument —

    (series): "Discipline"
                                                                                str
     Name of the series.
    – Argument —
    (year): "2024"
                                                                                str
     Year of publication.

Argument —

    (cover): none
                                                                              image
     Cover image of the book.

Argument -

    ⟨logo⟩: none
                                                                              image
     Logo of the book.
  #show: book.with(
    title-page: book-title-page(
       logo: image("path_to_logo/logo.png"),
       cover: image("path_to_image/book-cover.jpg")
    )
  )
#thesis-page-title(
  (type): "phd",
  (school): "School name",
  (doctoral-school): "Name of the doctoral school",
  (supervisor): ("Supervisor name",),
  (cosupervisor): none,
  (laboratory): "Laboratory name",
  (defense-date): "01 January 1970",
  (discipline): "Discipline",
  (specialty): "Speciality",
  (committee): (:),
  (logo): none
) [body]

Argument —

    (type): "phd"
                                                                                str
     Type of thesis. Two values are possible:
     • "phd" for a doctoral thesis
     • "hablitation" for a French habilitation
```

III Helper functions III.5 Title pages

```
Argument —

(school): "School name"
                                                                                str
 Name of the institution where the thesis was prepared.
(doctoral-school): "Name of the doctoral school"
                                                                                str
 Name of the doctoral school.
– Argument -
(supervisor): ("Supervisor name",)
                                                                              array
 Name of the thesis supervisor(s) or the guarantor of the habilitation.
- Argument —
(cosupervisor): none
                                                                              array
 Name of the thesis co-supervisor(s).

Argument —

(laboratory): "Laboratory name"
                                                                                str
 Name of the research laboratory.

Argument —

(defense-date): "01 January 1970"
                                                                                str
 Date of the thesis defense.
- Argument –
(discipline): "Discipline"
                                                                                str
 Name of the discipline.
- Argument —
(specialty): "Speciality"
                                                                                str
 Name of the specialty.
– Argument –
(committee): (:)
                                                                              array
 Name of the thesis committee members. Each element of the array is a dictionary
 with the following keys:
 • name: Name of the committee member.
 • position: Position of the committee member (e.g., "Associate Professor", "Profes-
   sor", etc.).
 • affiliation: Affiliation of the committee member (e.g., "University Name").
 • role: Role of the committee member (e.g., "Chair", "Member", "Reviewer").
```

III Helper functions III.5 Title pages

```
Argument (logo): none image

Logo of the institution.
```

```
#let committee = (
    name: "Hari Seldon",
    position: "Full Professor",
    affiliation: "Streeling university",
    role: "President",
  ),
  (
    name: "Gal Dornick",
    position: "Associate Professor",
    affiliation: "Synnax University",
    role: "Reviewer"
  ),
)
#show: book.with(
  title-page: thesis-title-page(
    supervisor: ("Supervisor A", "Supervisor B"),
    cosupervisor: ("Co-supervisor A", "Co-supervisor B"),
    committee: committee
  )
)
```

For both title pages, the title of the document and its author are automatically generated based on the information given when initializing the template.

III.6 Back cover

A back cover of the document is automatically generated using the #back-cover function, which displays information about the thesis (title and author), as well as a summary in French and English.

```
#back-cover((resume): none, (abstract): none, (logo): none)

Argument
(resume)

Summary of the document in French.
```

III Helper functions III.6 Back cover

```
Argument

(abstract)

Summary of the document in English.

Argument
(logo)

Logo of the back cover.

#let logos = (align(left)[#image("images/devise_cnam.svg", width: 45%)], align(right)[#image("images/logo_cnam.png", width: 50%)])

#back-cover(lorem(10), lorem(10), logos)
```

III.7 Tufte layout

When the tufte layout is selected, several customizations are applied to adapt the appearance of various elements (figures, tables, equations, etc.) to the Tufte style.

```
#sidenote((dy): -1.5em, (numbered): true)[body]
     - Argument —
    \langle dy \rangle: -1.5em
                                                                                         length
      Vertical adjustment of the sidenote position.
     - Argument -
    (numbered): true
                                                                                           bool
      Indicates whether the sidenote should be numbered.
 When the layout is set to standard, the #sidenote function behaves like a standard #footnote.
#sidecite((key), (dy): -1.5em, (supplement): none)

Argument —

    (key)
                                                                                         label
      Key of the reference to cite.

Argument -

    \langle dy \rangle: -1.5em
                                                                                         length
      Vertical adjustment of the sidecite position.
     - Argument —
    (supplement): none
                                                                                            str
      Supplementary text to add before the citation (e.g., "see", "e.g.", etc.).
```

III Helper functions III.7 Tufte layout

```
When the layout is set to standard, the #sidecite function behaves like a standard #cite.
#sidefigure((content), (dy): -1.5em, (label): none, (caption): none)
    – Argument –
    (content)
                                                                                  content
     Content of the figure.
    – Argument –
    ⟨dy⟩: -1.5em
                                                                                   length
     Vertical adjustment of the sidefigure position.
    – Argument –
    (caption): none
                                                                                  content
     Caption of the figure.
    – Argument –
    (label): none
                                                                                    label
     Label of the figure.
#fullfigure((content), (label): none, (caption): none)
     - Argument -
    (content)
                                                                                   content
     Content of the figure.
    – Argument –
    (caption): none
                                                                                  content
     Caption of the figure.
    – Argument –
    (label): none
                                                                                    label
     Label of the figure.
```

When the layout is set to standard, #sidefigure and #fullfigure behave like a standard #figure.

Part IV

Theming

The theming system is designed to be flexible and customizable, allowing users to define their own themes.

To implement a custom theme, you have to define a function that includes the show and set rules defining the style of the document (headings, footnotes, references, ...). Basically, a theme should be structured as follows:

```
#import "bookly:0.2.0": *
#let my-theme(colors: default-colors, it) = {
  show heading.where(level: 1): it => {
    // Heading style
    . . .
  }
  show heading.where(level: 2): it => {
    // Heading style
    . . .
  }
  show heading.where(level: 3): it => {
    // Heading style
  }
  show outline.entry: it => {
   // Outline entry style
  }
  // Other show and set rules
  . . .
  it
}
```

IV Theming

You can also define your own functions such as #part, #minitoc and other elements of the document.

bookly provides some states that can be useful when designing a custom theme. The states are used to store information about the current state of the document. They are collected in a dictionary. The following states are available:

- states.localization dictionary : Dictionary of terms used in the document (e.g., "chapter", etc.) in the selected language.
- states.in-outline bool: Indicates whether the current section is in the outline.
- states.isfrontmatter bool: Indicates whether the current section is front matter.
- states.isappendix bool: Indicates whether the current section is an appendix.
- states.num-pattern str: Numbering pattern for sections.
- states.num-pattern-fig str: Numbering pattern for figures.
- states.num-pattern-subfig str: Numbering pattern for subfigures.
- states.num-pattern-eq str: Numbering pattern for equations.
- states.num-heading str: Numbering pattern for headings.
- states.page-numbering str: Numbering pattern for pages.
- states.author str: Author of the document.
- states.title str: Title of the document.
- states.counter-part str: Counter for parts.
- states.colors dictionary : Color scheme for the document.
- states.theme str: Current theme of the document.
- states.layout str: Current layout of the document.
- states.sidenotecounter int : Counter for sidenotes.

bookly also comes with a function #reset-counters to reset the counters for equations, figures, tables, sidenotes, and footnotes.

Part V

Roadmap

The template is under development. Here is the list of features that are implemented or will be in a future version.

Themes

- fancy
- ✓ modern
- classic
- ✓ User-defined themes (requires a refactoring of the theming)

Layout

- ✓ Standard layout
- ✓ Tufte layout

Cover pages

- Title page
- ☑ Back cover

Environments

- Creation of the front-matter environment
- Creation of the main-matter environment
- Creation of the appendix environment

Parts and chapters

- ✓ Creation of a document part #part
- Creation of a document chapter #chapter
- ✓ Creation of an unnumbered chapter #chapter-nonum

Tables of contents

- Creation of the table of contents #tableofcontents
- ✓ Creation of the list of figures #listoffigures
- ✓ Creation of the list of tables #listoftables
- ✓ Creation of a mini table of contents at the beginning of chapters using the suboutline package (see link²)
- Customization of entries (appearance, hyperlink) by modifying the outline.entry element
- ✓ Localization of the different tables

Figures and tables

- Customization of the appearance of figure and table captions depending on the context (chapter or appendix)
- Short titles for the lists of figures and tables
- Creation of the #subfigure function for subfigures via the subpar package

Equations

²https://typst.app/universe/package/minitoc

V Roadmap

- ✓ Adaptation of equation numbering depending on the context (chapter or appendix)
- ✓ Creation of a function to highlight important equations #boxeq
- ☑ Creation of a function to define equations without numbering #nonumeq
- ☑ Use of the equate package to number equations in a system like (1.1a)

Boxes

✓ Creation of information boxes to highlight important content

Bibliography

- ✓ Verification of the reference list via bibtex
- ✓ Same for hayagriva (see documentation³)

³https://github.com/typst/hayagriva/blob/main/docs/file-format.md