

Basic Book Builder

A Pandoc build process for books, docs and articles



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Introduction

This is a basic book (or article / document) builder template based on a Pandoc([Pandoc - Index, n.d.](#)) build process in conjunction with a number of other tools to generate PDF, HTML, LaTeX, Markdown, ODT, DOCX, and Epub book output formats from a single set Markdown source content , which can optionally be edited as an Obsidian vault.

This **basic book builder**([Jehaverlack/Basic-Book-Builder, n.d.](#)) template has been curated by John Haverlack.([John Haverlack | ACEP, n.d.](#))

Getting Started

2.1 Cloning the Basic Book Builder

Clone the repository

```
git clone https://github.com/jehaverlack/basic-book-builder.git
```

Navigate to the repo directory

```
cd basic-book-builder
```

2.2 Setting Up Build Environment

Debian Linux

This script only support Debian based Linux system (Debian, Ubunutu, Zorin, etc) This script has not been widely tested across platforms

Setup Build Environment

```
./scripts/setup-linux-deb.sh
```

For more information on setting up the build environment for your system see Appendix A.

2.3 Testing

If you can build all format for the **Basic Book Build** then you have a working build environment.

Testing Build Environment
<code>make all</code>

2.4 Creating a New Project

2.4.1 Zotero Configuration (Optional)

Usage

3.1 Creating a Project

To create a new Project based on the Basic Book Builder template:

1. Run the new-project.sh script.

```
./scripts/new-project.sh <PATH_TO_PROJECT>
```

- should be outside of the **basic-book-builder** directory

```
cd <PATH_TO_PROJECT>
```

Update:

1. metadata.yaml
2. templates/pandoc.yaml

[!info] Suggestion Create a git repository to version control your new content.

3.2 Editing Content

Edit your source content Markdown under the chapters directory.

Optional

- Open your <PATH_TO_PROJECT> directory as an Obsidian vault.
- Edit your Markdown with Obsidian

3.3 Building

3.3.1 PDF

```
make pdf
```

NOTE: Building the PDF also builds the **LaTeX** version of the book.

3.3.2 HTML

`make html`

3.3.3 DocX

`make docx`

NOTE: DocX is a work in progress. Frontmatter and formatting need work.

3.3.4 ODT

`make odt`

NOTE: ODT is a work in progress. Frontmatter and formatting need work.

3.3.5 Make All

To build all supported formats

`make all`

Features

4.1 Metadata

Metadata for the project is managed in `metadata.yaml`. Edit this file to make global changes to variables for your document. Changes here will propagate to all format builds.

4.2 Front-matter

Front matter content is managed in:

- `templates/frontmatter.tex`
- `templates/frontmatter.html`
- `templates/frontmatter-md.html`

Tip

Unfortunately when you edit one, you need to edit the respective changes to the other front-matter formats. ### Title Page

Edit the **Front-matter** files to modify the formatting of the Title Page.

Tip

You'll need to modify the HTML / LaTeX.

4.2.1 Meta Data Page

Edit the **Front-matter** files to modify the 2nd page Metadata format.

4.2.2 Cover Illustration

Edit the **Front-matter** files to optionally un-comment the Cover Art Acknowledgement.

- This is disabled by default

4.2.3 Dedication

Edit the **Front-matter** files to modify un-comment the Book Dedication.

- This is disabled by default ## Table of Contents

4.3 Chapters

Chapter Markdown source files are located in the chapters directory. Edit the `template\pandoc.yaml` file to control which chapter markdown files are in what order.

4.4 Appendixes

TBD

4.5 Glossary

TBD

4.6 Index

TBD

4.6.1 Markdown Indexes

TBD

4.7 Bibliography

TBD

4.7.1 Zotero Integration

TBD

4.7.2 Obsidian Citations

TBD

4.8 Mathjax Equations

TBD

4.8.1 Left Justified / Inline

TBD

4.8.2 Centered

TBD

4.9 Custom Markdown

TBD

4.9.1 Call-outs

A few call-out box styles have been custom added to easily highlight certain types of content.

Markdown Example
<code>[!established] Green Call-out Title</code> A green box

Will render:

Green Call-out Title
A green box

Markdown Example

```
[!proposed] Blue Call-out Title  
A blue box
```

Will render:

Blue Call-out Title

A blue box

Markdown Example

```
[!info] Info Box  
Same as a blue box
```

Will render:

[!info] Info Box Same as a blue box

Markdown Example

```
[!speculative] Purple Call-out Title  
A purple box
```

Will render:

Purple Call-out Title

A purple box

Markdown Example

```
[!caution] Caution Note  
Beware of this section. AKA a orange box.
```

Will render:

CHAPTER 4. FEATURES

Caution Note

Beware of this section. AKA a orange box.

Markdown Example

```
[!warning] Warning Note  
Same as the Caution Box
```

Will render:

Warning Note

Same as the Caution Box

Markdown Example

```
[!danger] Alert  
A slightly stronger warning.  AKA a red box.
```

Will render:

Alert

A slightly stronger warning. AKA a red box.

Markdown Example

```
[!code] Code Block  
' ''  
if [ true ]; do  
    echo "The Cow Jumps over the Moon"  
fi  
' ''
```

Will render:

CHAPTER 4. FEATURES

Code Block

```
if [ true ]; do
    echo "The Cow Jumps over the Moon"
fi
```

Markdown Example

```
[!cli] Command line
A command line example
'''
$ ls
build chapters conf filters lib LICENSE.md Makefile metadata.yaml >README
'''
```

Will render:

Command line

```
A command line example
$ ls
build chapters conf filters lib LICENSE.md Makefile metadata.yaml README
```

Appendix A

Appendix A: Build Environment Notes

A.1 Installing Pre-Requisites

Not Cross-platform Tested

For Debian / ZorinOS and likely Ubuntu based systems.

A.1.1 Required

A.1.1.1 Pandoc

- <https://pandoc.org/>
- [Download](#)

```
sudo apt install https://github.com/jgm/pandoc/releases/download/3.8.2.1
```

A.1.1.2 Code Editor

Code Editor

[VSCodium](#) is recommend for privacy (telemetry/tracking) reasons - <https://vscodium.com/>

But any text editor will work. #### make

```
sudo apt install make
```

A.1.1.3 jq and yq

```
sudo apt install jq yq
```

A.1.1.4 texlive

```
sudo apt install texlive texlive-xetex texlive-latex-extra
texlive-fonts-recommended texlive-fonts-extra
```


A.1.1.5 MathJax

- <https://www.mathjax.org/>

```
wget https://registry.npmjs.org/mathjax/-/mathjax-3.2.2.tgz
tar xzf mathjax-3.2.2.tgz
mv package/es5/* lib/mathjax
rm -rf package mathjax-3.2.2.tgz
```

TODO

This need to be rolled into a setup script.

A.1.2 Optional

The following are not strictly requires to use this book builder template.

A.1.2.1 Obsidian

Highly Recommended

Editing book chapter content in Obsidian is a very productive means for editing Markdown source content.

- <https://obsidian.md/>
- [Deb Package](#)

```
sudo apt install https://github.com/obsidianmd/obsidian-releases/releases/download/
```

A.1.2.2 Zotero

Highly Recommended

If you need to managed citations and references, Zotero integration is highly recommended.

- <https://www.zotero.org/>

```
sudo cp ./scripts/deps/zotero.list /etc/apt/sources.list.d/
sudo apt update
sudo apt install zotero
```

A.1.2.2.1 Better BibTex for Zotero Install the Better BibTex Plugin for Zotero - Zotero > Tool > Plugins

A.1.2.2.2 Export citations.bib

- Zotero > File > Export Library > Format: Better BibTeX
- ☐ Keep Updated
- ☐ Save to: ~/Documents/Lib/zotero.bib
- ☐ Symlink your ~/Documents/Lib/Citations.bib to basic-book-builder/lib/zotero.bib

A.1.2.2.3 Zotero Connector Browser Plugin

- <https://chromewebstore.google.com/detail/zotero-connector/ekhagklcjbdpajgpjgmbionohl>

Provides you the ability to auto add Web resources to your Zotero citation database.

A.1.2.3 lmodern

```
sudo apt install lmodern
```

A.1.2.4 epubcheck

```
sudo apt install epubcheck
```

A.1.2.5 foliate

An EPub Reader

- <https://johnfactotum.github.io/foliate/>

```
sudo apt install https://github.com/johnfactotum/foliate/releases/download/2
```

A.1.2.6 calibre

An EPub Reader

- <https://calibre-ebook.com>

```
sudo apt install calibre
```

A.2 Editing the Configuration

Glossary

Term	Description
AST (Abstract Syntax Tree)	Pandoc's internal structured representation of a document. Lua filters operate on the AST before rendering to a target format.
Bibliography	A .bib file (e.g., Zotero export) used by Pandoc with citeproc to generate formatted citations and reference lists.
Callout	A styled block (e.g., [!warning]) transformed by Lua filters into format-specific output such as LaTeX environments or HTML <div> elements.
Defaults File (YAML)	A Pandoc configuration file defining output format, filters, metadata, and rendering options (e.g., pdf.yaml, html.yaml).
DOCX	Microsoft Word document format generated by Pandoc; styling is controlled via a reference.docx file.
Filter (Lua)	A script that modifies Pandoc's AST before rendering. Used in this workflow for callouts and other structural transformations.
Frontmatter	Format-specific content inserted before the main body (e.g., frontmatter.tex, frontmatter.html, frontmatter-docx.md).
HTML	Web output format generated by Pandoc, typically styled via CSS and supporting interactive features.
LaTeX	Typesetting system used for high-quality PDF generation via XeLaTeX in this workflow.
Lua Filter	A lightweight scripting extension used by Pandoc to customize document transformations programmatically.
Makefile	Automation script orchestrating the build pipeline for PDF, HTML, DOCX, ODT, and Markdown outputs.
Markdown	Plain-text markup language serving as the source format for all outputs in the workflow.
Metadata	Key-value pairs (e.g., metadata.yaml) defining title, author, license, version, and other document variables.
ODT	OpenDocument Text format used by LibreOffice; similar to DOCX but open-standard.

APPENDIX A. APPENDIX A: BUILD ENVIRONMENT NOTES

Term	Description
Pandoc	Universal document converter used to transform Markdown into PDF, HTML, DOCX, ODT, EPUB, and more.
PDF	Portable Document Format output produced via Pandoc + XeLaTeX.
Reference Document	A DOCX or ODT file defining styles (fonts, headings, spacing) used when generating Word/LibreOffice outputs.
Resource Path	Directories Pandoc searches for images, diagrams, and other assets during rendering.
Template	A format-specific layout file (e.g., LaTeX template) used to control document structure beyond styling.
TOC (Table of Contents)	Automatically generated navigation structure controlled by <code>toc</code> and <code>toc-depth</code> options.
XeLaTeX	LaTeX engine used to generate PDFs with modern font support (via <code>fontspec</code>).
Zotero	Reference manager used to generate <code>.bib</code> files for citation processing with Pandoc.

Index

Pandoc, [1](#)

Bibliography

Bibliography

Jehaverlack/Basic-Book-Builder: A Pandoc Workflow for Building PDF, HTML, EPUB, and LaTeX Book Format. n.d. <https://github.com/jehaverlack/basic-book-builder>.

John Haverlack | ACEP. n.d. <https://www.uaf.edu/acep/about/our-team/john-haverlack.php>.

Pandoc - Index. n.d. <https://pandoc.org/>.

Jehaverlack/Basic-Book-Builder: A Pandoc Workflow for Building PDF, HTML, EPUB, and LaTeX Book Format. n.d. <https://github.com/jehaverlack/basic-book-builder>.

John Haverlack | ACEP. n.d. <https://www.uaf.edu/acep/about/our-team/john-haverlack.php>.

Pandoc - Index. n.d. <https://pandoc.org/>.

Bibliography