

# PreTeXt for Novices Using Windows



# PreTeXt for Novices Using Windows

Jessica K. Sklar  
Pacific Lutheran University

**Edition:** First Edition

©2017 Jessica K. Sklar

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the appendix entitled “GNU Free Documentation License.”

# Contents

<b>1</b>	<b>Important introductory notes</b>	<b>1</b>
<b>2</b>	<b>Software and GitHub account setup</b>	<b>2</b>
<b>3</b>	<b>Cloning and maintaining the <code>mathbook</code> repo</b>	<b>5</b>
<b>4</b>	<b>Command Line Navigation</b>	<b>7</b>
<b>5</b>	<b>Compiling a PTX file</b>	<b>8</b>
<b>6</b>	<b>Creating a PTX file</b>	<b>10</b>
6.1	First steps . . . . .	10
6.2	Familiarize yourself with the RELAX-NG schema . . . . .	10
6.3	Coding modularly using <code>xinclude</code> . . . . .	11
<b>A</b>	<b>GNU Free Documentation License</b>	<b>12</b>
	<b>Bibliography</b>	<b>19</b>

# Chapter 1

## Important introductory notes

This tutorial will help novice PreTeXt (PTX) users install necessary software on their Windows machine and learn the basics of compiling PTX files into HTML and PDF forms. It will be important to keep the following in mind throughout.

- Much of the documentation about PreTeXt (PTX) will refer to it by its previous name, MathBook XML (XML), and many of the example PTX documents found in the `mathbook` repo (you'll learn what that is in [Chapter 3](#)) will have XML extensions. “XML” is being slowly being migrated to “PTX” in the documentation, but it may take a while since the documentation is extensive! You can replace, in your mind, XML with PTX anytime it appears.
- We recommend **NOT** changing PATH environment variables on Windows unless you absolutely have to. Which sometimes you do. But if you see in documentation that changing the PATH variable is *optional*, don't do it. Many Windows users have a surprising amount of trouble changing PATH variables, through no fault of their own.
- You're encouraged to join the Google group pretext-support: <https://groups.google.com/forum/?fromgroups#!forum/pretext-support>. When you run into trouble or have questions, you can post in the group; you can also search the group for possible posts addressing your questions.
- Corrections, comments, suggestions, and edits are encouraged! If you are a novice, please send feedback to Jessica at [sklarjk@plu.edu](mailto:sklarjk@plu.edu) or post in the `pretext-support` group. More seasoned users: the source materials for this document reside in the GitHub `sklarjk/novices` repo. Feel free to create a new issue on the repo, or initiate a pull request with proposed edits.

## Chapter 2

# Software and GitHub account setup

Here we provide a list of the steps you will need to take to get PTX up and running on your local Windows machine. (You can find more extensive documentation for this in Sections E.1–E.3 in Dave Rosoff’s invaluable *Windows Installation Notes* in [2], though we recommend *avoiding performing the task described in Section E.2.2*; see [Step 5](#) below.)

*You may perform most of the installations in any order, but should perform [Step 5](#) after [Step 2](#).*

1. Install a text editor.

If you don’t already have one installed that you like to use, you will need to install a text editor that will produce “unformatted” text.

If you don’t know what that means, or don’t already have such an editor that you like, we recommend installing Sublime Text, which you can download at <https://www.sublimetext.com/>. (You can use the trial version for free indefinitely, but will get regular pop-ups asking you to register; as of summer 2017, registration cost \$70.)

For more extensive information about text editors you may use with PTX, see Appendix B in [2].

*Why this installation?* You will write your PTX source documents using this editor.

*Installation difficulty level:* Easy.

2. Install Git and create a shortcut to the Git Bash shell.

- (a) Install Git by choosing the Windows option at <https://git-scm.com/book/en/v2/Getting-Started-Installing-Git> and selecting the default options.

*Why this installation?* From the Introduction in [1]: “Git ... is a revision control system. What’s that? It is a tool to record changes to software, a tool to experiment with changes to software, and a tool to collaborate creating software.”

For more details on why you’ll be using Git (and how to use it!), see [1].

- (b) Create a shortcut to the file `git-bash.exe`.

*Why this shortcut creation?* **You will perform all of your compilations in the Git Bash shell**, which is installed when you install Git. You don't need to know what it is, exactly, other than that it is a command-line interface in which you'll enter your commands. If you've used Unix or Linux, you're in your wheelhouse in the Git Bash shell. If you haven't, don't worry; we'll cover the basics of what you need to know.

*Installation and shortcut creation difficulty level:* Easy.

3. Sign up for a GitHub account at <https://github.com>.

*Why sign up for this account?* GitHub is a code hosting platform. We will later elaborate on how we will use GitHub.

*Sign-up difficulty level:* Easy.

4. If you plan to create PDFs from your PTX files, you will need to have a LaTeX compiler installed. (If you only plan to create HTML files, you may skip this step.)

If you don't already have one, one option is MiKTeX, which you can download from <https://miktex.org/howto/install-miktex>. Simply choose the default options when installing, as long as by default it installs into a folder whose path name (e.g., C:/Users/username/AppData/Local/Programs/MiKTeX/) contains no spaces. (Spaces in path names can cause problems, and should be avoided as much as possible.) If the default path name contains spaces, change the installation location to one that doesn't contain spaces.

If you choose another LaTeX compiler, make sure it includes the executable files `xetex.exe` and `pdflatex.exe`, and again, make sure to install it in a location that avoids spaces in its path name.

*Why this installation?* We can compile our PTX files to LaTeX files using `xsltproc` (see [Step 5](#)), but we must then use a LaTeX compiler to compile the LaTeX files to PDFs.

*Installation difficulty level:* Easy, other than ensuring installation paths don't contain spaces.

5. Install `xsltproc`.

Follow the instructions for installing `xsltproc` *exactly* as described in the Karl-Dieter Crisman's Windows *Getting Started* video found at <http://mathbook.pugetsound.edu/documentation.html#getting-started-videos>. The installation files are at <https://www.zlatkovic.com/libxml.en.html> and the discussion of the installation of `xsltproc` begins in the video at 3:31. We elaborate on some of the video instructions below.

- A description of the exact files you will need to download from the website are found in Lists E.2.1 and E.2.2 in Appendix E of [\[2\]](#).
- ***It is essential that you install the xsltproc files in your default Git Bash directory in order for you to avoid making adjustments to later commands.***

To find what that directory is, open the Git Bash shell using the shortcut on your desktop, and enter `pwd`. This will likely yield `c/users/username`, where `username` is the profile under which you're logged into your Windows machine. In any case, ***this is your default Git Bash directory***. You will need to move all the files you extract, as per the video instructions, into this directory.

- *Do not move the `xsltproc` folder or its contents from their initial locations, and do not change the `PATH` environment variable name, despite this option being described in E.2.2 in [2].*

*Why this installation?* `xsltproc` is a command line tool for applying XSLT stylesheets to XML documents. You don't need to worry about what this means, but you do need to have the tool installed.

*Installation difficulty level:* Moderate. (Potentially-difficult-to-hair-pulling if you try to change the `PATH` variable name.) Carefully follow the video instructions.

## Chapter 3

# Cloning and maintaining the mathbook repo

Don't know what this means? That's ok! A GitHub repository (or "repo") is basically a collection of files hosted on GitHub, and what you need to know for now is that you're essentially copying onto your local computer a GitHub repo in a way that will allow you to later easily update the files on your local machine in accordance with their updates in the corresponding GitHub repo. Some of these files you don't "need" (e.g., the library of examples), but some you do (e.g., the files `mathbook-html.xsl` and `mathbook-latex.xsl`), and you will need to update these from GitHub from time to time, so you should follow these instructions exactly.

### 1. *Cloning the mathbook repository*

In your Git Bash shell, first enter the command `cd` (this will take you to your default directory).

Next, enter in the following commands, pressing enter after each command:

```
git clone https://github.com/rbeezer/mathbook.git
cd mathbook
git checkout dev
```

This will install a folder called `mathbook` in your on your local machine that contains the necessary (and optional) files. ***Do not move this folder or its contents. If you install this folder somewhere else, or move it, you will need to make adjustments to later commands described in this tutorial.***

### 2. *Keeping the mathbook repository on your local machine up to date*

Whenever the developers make changes to the files in the GitHub repository `mathbook`, you can update these files accordingly on your local machine by navigating in the Git Bash shell to the `mathbook` folder and entering the command `git pull`.

You should pull from this repo daily, or at least whenever you plan to compile, since it is very regularly updated.

***Important note:*** When you `git pull` to update your `mathbook` folder, you should be in the `dev`, not `master`, branch. If your Git Bash prompt ends in `mathbook (dev)`, you're in the correct branch. If it ends in

mathbook (master), enter in `git checkout dev` to move to the correct dev branch before entering `git pull`.

## Chapter 4

# Command Line Navigation

In order to compile your documents and use `git`, you will need to be able to navigate your file system using the command line in your Git Bash shell. You can find a decent summary of the basic navigation commands at [Beginner: Linux Navigation Manual](#) and an index of the Git Bash shell commands at [An A-Z Index of the Bash command line for Linux](#).

The essentials for you to learn are the commands `pwd` and `ls`, and how to use the command `cd` to move from one folder to another. In particular, `cd ~` will return you to your default directory, `cd ..` will take you up one level in the file system, and entering in `cd im/going/here`, for instance, while in your default directory will take you to the directory `here` with file path `~/im/going/here`.

## Chapter 5

# Compiling a PTX file

Now is the time for the magic to happen! You will take a sample PTX file (extension `ptx` or `xml`) and use it to create an HTML document and a PDF. (Note: XML is a deprecated file type; when you create PTX documents, your extension should be `ptx`.)

First, navigate in your Git Bash shell to the folder containing the PTX or XML file you plan to work with. For our example, navigate to `~/mathbook/examples/hello-world`, which contains the XML file `hello-world.xml`.

**To compile to HTML:** From the folder containing `hello-world.xml`, type

```
~/xsltproc/xsltproc --xinclude ~/mathbook/xsl/mathbook-html.xsl hello-world.xml.
```

This will compile the XML file into an HTML file, `hello-world.html`, in the same folder as `hello-world.xml`. You can open it by navigating to the folder via the Windows desktop and opening it the way you'd open any HTML document on your machine.

**To compile to PDF:**

1. From the folder containing `hello-world.xml`, type in the same command as you used to create the HTML document, replacing the `mathbook-html.xsl` with `mathbook-latex.xsl`; that is, enter

```
~/xsltproc/xsltproc --xinclude ~/mathbook/xsl/mathbook-latex.xsl  
hello-world.xml.
```

This will compile the XML file into a LaTeX file, `hello-world.tex`, in the same folder as `hello-world.xml`.

2. From *the same folder*, enter the command `pdflatex hello-world.tex` to create a PDF from the LaTeX file. `hello-world.pdf` will appear in the folder. You can open it by navigating to the folder via the Windows desktop and opening it the way you'd open any PDF document on your machine.

You can generalize from this to compile any PTX (XML) file to HTML or PDF.

### Note 5.0.1

- To compile a file, *first make sure you are in the directory in your Git Bash shell which contains the file to be compiled.*
- If your `xsltproc` and `mathbook` folders are in your default directory on your local machine, you can always start off your `xsltproc` compilation commands with

```
~/xsltproc/xsltproc --xinclude ~/mathbook/xsl/mathbook-html.xsl
```

(for HTML),

or

```
~/xsltproc/xsltproc --xinclude ~/mathbook/xsl/mathbook-html.xml
```

(for LaTeX),

and simply append the name of your PTX (XML) file. *If you have installed or moved one or both of these directories elsewhere, you will need to change the path(s) to xsltproc.exe and/or to the xsl file in the command.*

- You can always compile your LaTeX file to PDF by typing `pdflatex` and appending the name of your LaTeX file (provided you're in the directory containing your LaTeX file).

**Remark 5.0.2** What was all that stuff in the `xsltproc` compilation commands??

- `~/xsltproc/xsltproc` ran the `xsltproc` executable, living within the `xsltproc` folder.
- `--xinclude` is an optional command that is required if you include modular PTX files in your main PTX file; don't worry about what that means for now. Suffice to say that you can always include that optional command without running into problems, so why not include it by default?
- `~/mathbook/xsl/mathbook-html.xml` and `~/mathbook/xsl/mathbook-latex.xml` are the style files that make the PTX compile to HTML or LaTeX.
- Finally, `hello-world.xml` was, of course, the name of the file you were compiling to HTML or LaTeX!

## Chapter 6

# Creating a PTX file

### 6.1 First steps

Now is a good time to try creating your own PTX document. The easiest way to do this is to first follow the instructions in the “A Careful, Quick Minimal Example,” chapter in [2] to create your first PTX document.

The next step might then be to choose a PTX (or XML) file from the `mathbook/examples` folder and use it as a template. A good template to start with is `mathbook/examples/sample-article/sample-article.xml`: the HTML version of the sample article, <http://mathbook.pugetsound.edu/examples/sample-article/html/>, provides some instruction for writing in PTX, while the XML code itself demonstrates actual PTX coding.

*Remember that when you compile, you will always need to be sure you are including the correct path to the style file, based on your PTX file’s location.*

**Changing your output file names:** By default, your PTX will compile to an HTML (respectively, LaTeX) file called `index.html` (resp., `index.tex`). If you are writing an `<article>` and you wish your output files to have, say, the title “ducks” preceding the extension, add the attribute `xml:id="ducks"` to your `<article>` element using the following code: `<article xml:id="ducks">`.

Take some time playing with whichever template(s) you choose. Experiment with creating lists, using `<theorem>` and `<example>` elements, etc. (For now you can think of “elements” in PreTeXt as playing the role which environments play in LaTeX.) *Try not to worry about the appearance of your HTML or PDF at the moment; you can customize appearances later.*

### 6.2 Familiarize yourself with the RELAX-NG schema

From the section on RELAX-NG schema in [2]: “A **schema** is a set of patterns which describe how the elements of a language may be combined. The PreTeXt vocabulary is described by a RELAX-NG schema”.

As you experiment, you should start getting used to the “RELAX-NG SCHEMA.” If you do not follow the schema, your PTX code may not compile correctly, and even if it does compile correctly, it may not do so after an update to the `mathbook` repo.

A description for the RELAX-NG schema can be found at <http://mathbook.pugetsound.edu/doc/schema/>. For instance, if you select the element `<example>` in the left-hand column, you will see lists of elements under the headings

“*Content model elements*” and “*Included in content model of elements*.” The former list contains the elements that the `<example>` element may contain, and the latter contains the elements in which the `<example>` element may be contained.

### 6.3 Coding modularly using `xinclude`

From [2]: “The `xinclude` mechanism ... is of some use for organizing your work, so you do not have mammoth files open in your editor.” By using this mechanism you can put portions of your document in separate PTX files and then “include” them in your main file. For instance, if your book has five chapters, you may want to write each chapter in a separate PTX file.

If you wish to, for instance, include the chapter in the file `algebra.ptx` in your main file, `index.ptx`, put `algebra.ptx` in the same directory as `index.ptx`, and insert the following code in `index.ptx` where you want the chapter to appear: `<xi:include href="algebra.ptx" />`. You can see examples of this technique being used in `mathbook/examples/sample-book/sample-book.xml`.

For more details, see the section on [Modular Source Files](#) in [2].

# Appendix A

## GNU Free Documentation License

Version 1.3, 3 November 2008

Copyright © 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.  
<<http://www.fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

**0. PREAMBLE.** The purpose of this License is to make a manual, textbook, or other functional and useful document “free” in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of “copyleft”, which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

**1. APPLICABILITY AND DEFINITIONS.** This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The “Document”, below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as “you”. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A “Modified Version” of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A “Secondary Section” is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document’s overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The “Invariant Sections” are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The “Cover Texts” are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A “Transparent” copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not “Transparent” is called “Opaque”.

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The “Title Page” means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, “Title Page” means the text near the most prominent appearance of the work’s title, preceding the beginning of the body of the text.

The “publisher” means any person or entity that distributes copies of the Document to the public.

A section “Entitled XYZ” means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as “Acknowledgements”, “Dedications”, “Endorsements”, or “History”.) To “Preserve the Title” of such a section when you modify the Document means that it remains a section “Entitled XYZ” according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers

are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

**2. VERBATIM COPYING.** You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

**3. COPYING IN QUANTITY.** If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

**4. MODIFICATIONS.** You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

- A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if

there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

- B. List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.
- C. State on the Title page the name of the publisher of the Modified Version, as the publisher.
- D. Preserve all the copyright notices of the Document.
- E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.
- F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.
- G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.
- H. Include an unaltered copy of this License.
- I. Preserve the section Entitled "History", Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.
- J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.
- K. For any section Entitled "Acknowledgements" or "Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.
- L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.
- M. Delete any section Entitled "Endorsements". Such a section may not be included in the Modified Version.
- N. Do not retitle any existing section to be Entitled "Endorsements" or to conflict in title with any Invariant Section.
- O. Preserve any Warranty Disclaimers.

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version’s license notice. These titles must be distinct from any other section titles.

You may add a section Entitled “Endorsements”, provided it contains nothing but endorsements of your Modified Version by various parties — for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

**5. COMBINING DOCUMENTS.** You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled “History” in the various original documents, forming one section Entitled “History”; likewise combine any sections Entitled “Acknowledgements”, and any sections Entitled “Dedications”. You must delete all sections Entitled “Endorsements”.

**6. COLLECTIONS OF DOCUMENTS.** You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

**7. AGGREGATION WITH INDEPENDENT WORKS.** A compilation of the Document or its derivatives with other separate and independent

documents or works, in or on a volume of a storage or distribution medium, is called an “aggregate” if the copyright resulting from the compilation is not used to limit the legal rights of the compilation’s users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document’s Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

**8. TRANSLATION.** Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled “Acknowledgements”, “Dedications”, or “History”, the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

**9. TERMINATION.** You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

**10. FUTURE REVISIONS OF THIS LICENSE.** The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <http://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License “or

any later version” applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy’s public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

**11. RELICENSING.** “Massive Multiauthor Collaboration Site” (or “MMC Site”) means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A “Massive Multiauthor Collaboration” (or “MMC”) contained in the site means any set of copyrightable works thus published on the MMC site.

“CC-BY-SA” means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

“Incorporate” means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is “eligible for relicensing” if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

**ADDENDUM: How to use this License for your documents.** To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

```
Copyright (C) YEAR YOUR NAME.
Permission is granted to copy, distribute and/or modify this document
under the terms of the GNU Free Documentation License, Version 1.3
or any later version published by the Free Software Foundation;
with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts.
A copy of the license is included in the section entitled "GNU
Free Documentation License".
```

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the “with... Texts.” line with this:

```
with the Invariant Sections being LIST THEIR TITLES, with the
Front-Cover Texts being LIST, and with the Back-Cover Texts being LIST.
```

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

# Bibliography

- [1] Rob A. Beezer and David Farmer, *Git for Authors*. Published under the GNU Free Documentation License, 2016. <https://mathbook.pugetsound.edu/gfa/html/>. Accessed 4 August 2017.
- [2] Rob A. Beezer, *MathBook XML Author's Guide*. Published under the GNU Free Documentation License, 2013 (revised 2017). <http://mathbook.pugetsound.edu/doc/author-guide/html>. Accessed 4 August 2017.
- [3] Karl-Dieter Crisman. <http://mathbook.pugetsound.edu/documentation.html#getting-started-videos>. Video.
- [4] Prakrit Duangsutha, *Beginner: Linux Navigation Manual*. Lifewire: Tech Untangled. <https://www.pluralsight.com/guides/other/beginner-linux-navigation-manual>.
- [5] *An A-Z Index of the Bash command line for Linux*. <https://ss64.com/bash/>.

## Colophon

This tutorial was authored in [PreTeXt](#).