

**Nu**

---

Modern keybinding for Emacs

**Pierre-Yves Luyten()**

---

This manual is for Nu (version 0.3 of 2014-08-03), a modern keybinding for Emacs. Copyright © 2014 Pierre-Yves Luyten.

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”.

## Table of Contents

<b>1</b>	<b>Overview .....</b>	<b>1</b>
1.1	Dependencies .....	1
1.2	Help .....	1
<b>2</b>	<b>NU for the power user .....</b>	<b>2</b>
<b>3</b>	<b>View and Edit .....</b>	<b>3</b>
3.1	Navigate .....	3
3.2	Selections and Deletion .....	3
3.3	Cut Copy Paste .....	4
3.4	Undo or Redo .....	4
3.5	Advanced Edition .....	4
<b>4</b>	<b>Files Buffers Windows .....</b>	<b>5</b>
<b>5</b>	<b>Hacking .....</b>	<b>6</b>
<b>6</b>	<b>NU &amp; other libraries .....</b>	<b>7</b>
6.1	org .....	7
6.2	magit .....	7
6.3	evil-mode .....	7
<b>7</b>	<b>Contributing .....</b>	<b>8</b>
<b>Appendix A GNU Free Documentation License</b>		
	.....	<b>9</b>

# 1 Overview

“Nu “ is a modern keybinding for Emacs.

nu-mode is a global minor mode, its keymap, and the commands which are not provided in raw Emacs.

Modern, means respecting conventions like

1. *Control-f* to find
2. *Control-r* to replace
3. *Control-s* to save
4. *Control-x*, *Control-c*, *Control-v* to cut, copy, paste.

To allow user to leverage large panel of functions, nu-mode relies on prompts. For example, *Control-f* raises a prompt precising which key - actually, which sequence - to press in order to execute desired function : once *Control-f* has been pressed and the “Find-prompt” appears, pressing *f* will toggle ace-jump-char-mode, *C-f* will start a regexp search, while *g* will execute goto-line, or *s* will move point to previous selection.

Most common shortcuts - ie, common to most applications - respect this guideline. Thus, there is a prompt for *s*, *v*, *a*... Almost all prompts rely on Control modifier to be run. There are exceptions. Since *Control+s* invoking a prompt would be irritating, this sequence directly saves buffer, while *Alt+s* runs the “save prompt”.

nu-emacs does not only provides nu-mode. There are also two independant parts

1. nu-alias is a simple mechanism to define aliases into org-mode file(s). This way its easier to maintain aliases to be invoked from Mx. See its REAME.
2. dhammacakka is a light set of customization. See its README.

## 1.1 Dependencies

Nu depends on several libraries, both native or external ones :

1. help-fns+
2. undo-tree
3. ace-jump
4. recentf
5. cua-selection-mode
6. magit is optional

## 1.2 Help

Use *Control-q* to quit a sequence or a command in progress. Use *Alt+z* to undo last command. Use *Control+h* to gain access to help functions. This includes the usual shortcuts to describe what a key does, or what a function does. If you messed up, use *Control+w* then *Control+q* to quit.

Prompts are usually triggered using a *Control* modifier and advertise a function using the same key, but with *Alt* modifier. For example, *Control-f* will pop-up a find-prompt, while *Alt-f* will directly allow you to ‘ace-jump’ to a char.

These prompts offer you to quickly learn where functions are.

## 2 NU for the power user

If you are not used to Emacs, reading this chapter is not necessary. But Emacs veteran should probably start here. emacs-nu redefines many keys, however two points make learning curve shorter

1. For any user, knowing CUA keybinds will make emacs-nu discoverable.
2. For veteran Emacs user, two important sequences remain:

*M-x* is still there. This means, you can probably obtain what you want. Also, *Control+h* for help-prefix is still there.

Now, two things should probably be kept in mind while trying nu-mode

1. To trigger a major mode sequence, start with *Control+Space*. This will invoke vanilla emacs *Control+c*. For example, into org-mode, use *Control+Space Control+n* to navigate to next node. If you already defined you own keys starting with *Control+c*, do not amend this definition.

```
(define-key mykeymap kbd("\C-c h") myfunction)
```

To invoke above myfunction example, press *Control-SPC h*.

2. You should not rely on *Control+x*, or at least no regularly. However to trigger x prefix, use *Control+g*. This will raise a prompt to trigger Control-X-Prefix.

‘Repeat’ is invoked from *Control+Return*. It was hacked to work with prompts : thus, you can repeat a command ran from a prompt. Prefix arguments (numeric-argument, negative-argument) can work : first trigger the argument, then call the prompt. The command will consume the argument (not the prompt).

Note that ‘where-is’ function, which sometimes advertises shortcuts, will not work as usual, since a prompt is not a keymap : ‘where-is’ do not know how to invoke *Control-f* then *k* to reach end of buffer. (Did you try where-is git push in magit?)

Thus :

1. For each function accessible from a prompt, an additional shortcut is created, accessible from *menu* plus the same *key* than the prompt, in order to make where-is advertise. Hence, if you read ‘You can run this command with <menu> f k’, please understand, despite it is also true, that you can also run the command with *Control-f-k*.
2. From the help prompt (*Control-h*), run *h* to invoke nu-help. This function will present you all prompts, and will offer you to describe their keymaps - that is, all the functions you can access from these prompts.

## 3 View and Edit

Obviously just type keys to input text. With slight notes : **Alt+m** to carriage return + indent. Use **Alt+v** + c to insert literally a character.

### 3.1 Navigate

While arrows still work, Nu uses **Alt** key to navigate. Hence, the thumb often presses **Alt** key, while pinky finger remains safe. This is exactly the same principle than ErgoEmacs applies. Navigate up left right down using **Alt** and :

```
I
J K L
```

Additionally, use **Alt u** and **Alt o** to move to previous, next word.

```
U I O
J K L
```

Use **Alt+\$** to go to end of line, or **Alt+h** to go beginning of line. To reach a line or a specific character, or the beginning of buffer, or the end of the buffer, use **Control+f** then the appropriate key. Just read the prompt. Or use **Alt+f** if you just want to find-char.

Notice that f key, used both with ‘control’ and ‘alt’ modifiers, offers find-related features. One of these keys is direct : it directly executes a command, & maybe a very common one. The other key does raise a prompt to offer more features. This principle to have one ‘alt’ modifier plus one ‘control’ modifier applies to other keys, as well.

Numeric arguments can apply to navigation. Press **Alt+1** then **Alt+5** to input 15 as a numeric argument ; now input **Alt+k** to go down one line : this will go down 15 lines.

‘Repeat’ also applies to navigation. Enter **Control+Return** to repeat a navigation.

However - let’s finish with navigation. Use **Alt+Space** to scroll (to the bottom), and **Alt+Backspace** to go back to the top. Emacs vanilla keybindings for ‘help-mode’ and some other offer Space and Backspace to do this - this is one of the few conventions respected into Emacs-nu. Yup.

This navigation chapter is meant as a general introduction to emacs-nu ; because navigation is a basis, but also because we saw many emacs-nu principles :

1. Direct keys for most common operations.
2. Prompts for slightly less common to rare operations.
3. Numeric arguments.
4. Repeat.
5. Few emacs convention respected, but some.

These same principles apply to other prompts.

### 3.2 Selections and Deletion

Now that you can input text plus navigate, let’s examine several alternatives to delete (cut) text.

1. Use **Control-x** to cut the current line.
2. Use **Control+j,Control+l** to delete backward, forward char.

3. Use **Control + u** to delete previous word.
4. Use **Control + \$** to delete up to end of line.
1. Use **Alt+d** to trigger a prompt. This will offer you to delete what you want (function, org-node, sentence, ...).
2. Alternatively, first mark (select) text you want to select then use **Control+x**.

Right, but how to select? Once again, several alternatives...here we go

1. The paddle allow to directly select (“mark”) text : keep **shift** pressed, then move either with arrows or **Alt+<some key of the paddle>**. Using **Alt-Shift-u**, for example, will select previous word (or extend current selection to previous word).
2. An alternative in order to select text is to press **Alt+a** to set a mark, then move to extend selection. You can also use a direct key to set a rectangular mark : **Control+S**, ie **Control+Shift+s**.
3. An alternative is to press **Control+a** to invoke “a-” prompt, allowing to select “a-” word, “a-” sentence, and so on, or to set the mark. Or, to set a rectangular mark. Read the prompt!

Once some text is selected you can “toggle the point and mark” using **Control+a**, or deactivate the selection using **Alt+a**, or cut the text using **Control+x** (or **Alt+d** might be nice depending on your fingers position).

### 3.3 Cut Copy Paste

When no selection is active, use **Control + x** to cut current line, or a deletion command since deletions actually cut text (as a reminder : emacs ‘kill-’ commands will copy to kill-ring, while emacs ‘delete-’ commands will not).

Use **Control + c** to copy current line, or, while a selection is active, copy this selection.

Use **Control + v** to paste the current clipboard. Following **Control + v** will replace this paste with precedent clipboard item. However, if you need to paste several times, first invoke a numeric prefix argument to specify how many times to paste, then type **Control+v**. Or, you can use **Alt + v** to invoke an advanced “Paste” prompt.

### 3.4 Undo or Redo

Use **Alt+z** to undo. Or, use **Control+z** to invoke undo-tree visualizer to play with discard changes in an advanced way. This screen displays last changes, and you can navigate these using the paddle (**Alt+i**, **Alt+j**, **Alt+k**, **Alt+l**). Press **q** to quit this screen.

### 3.5 Advanced Edition

Some advanced editon features rely on **Control-r**, which will invoke replace prompt, allowing you to replace-regexp, merge-lines, delete spaces, or invoke other functions.

1. **Alt+y** will copy to current line char under point (on the below line).
2. **Alt+e** will copy to current line char above point (on the above line).

**Alt+v** prompt to open a line. **Alt+s** prompt allows you to save current column as a goal-column. While you move next and previous lines, cursor will try to reach this column as far as possible.

## 4 Files Buffers Windows

Use *Control+s* to save current file, *Alt+s* to invoke a prompt to rename it.

1. Use *Control+o* to open a file, a window, a buffer, or use bookmarks,... Or move to another frame...or buffers list...
2. Use *Control+w* to raise a prompt offering to close this frame, or move to another frame, .... Or *Alt+w* to make this frame the only visible one.
3. Use *Control+n* to open a sracth buffer (blank untitled buffer) or split current frame.
4. Use *Control+t* to open another tab. It directly shows up an ibuffer list.

<sup>2</sup> will invoke buffers list on the current frame. The tab invokes on another one. ■



## 5 Hacking

The print buffer, invoked from *Control+p*, will offer you to eval things or make (compile). The insert prompt, invoked from *Alt+v*, will allow you to insert a file, or the result of an async shell command into a new buffer. The save buffer, from *Alt+s*, offers to use git power to save cats or so.

*Control+p* also offers to grep, find-grep or ediff.

## 6 NU & other libraries

How does NU integrate with other libraries?

### 6.1 org

As of today, NU has few features related to org. **Alt+s** prompt will allow you to org-store-link. **Alt+v** prompt will allow you to org-table-insert-column or row. More will come later ; as usual help is welcomed!

### 6.2 magit

Use Alt+s, ie save-prompt, to gain access to magit-status.

### 6.3 evil-mode

While nu-mode is not a modal editor, and aims at being the most efficient keymap, sometimes using lot of modifiers might still be harassing. Using vim keymap is feasible : you can activate evil-mode, then switch from evil-state to emacs-state as you want.

Even while in evil-state, you will enjoy a few nu-mode keys, like Alt+v, Alt+f, and probably many others. However vim paddle (hjkl for left down up right) and nu-mode paddle (ijkl for up left down right) disagree on three of these four keys! If you want to have evil with nu-mode paddle, I recommend you to make vim paddle similar to nu-mode. Since **i** will not be available anymore to insert, use **h** for this purpose. Simply put below lines on your .emacs:

```
(define-key evil-normal-state-map (kbd "h") 'evil-insert)
(define-key evil-normal-state-map (kbd "j") 'evil-backward-char)
(define-key evil-normal-state-map (kbd "i") 'evil-previous-line)
(define-key evil-normal-state-map (kbd "k") 'evil-next-line)
```

Obviously this only fixes the basic paddle. Backward and Forward word are different, but fixing the paddle is fine.

## 7 Contributing

As of today nu-mode only has one author, & contribution is more than welcomed. Please look at [github](#).

# Appendix A GNU Free Documentation License

Version 1.3, 3 November 2008

Copyright © 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

<http://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 non-commercially. 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.