

# Contents

<b>1</b>	<b>Installation</b>	<b>3</b>
<b>2</b>	<b>Package Setup</b>	<b>4</b>
2.1	Gnus . . . . .	4
2.2	Term . . . . .	4
<b>3</b>	<b>Functionality</b>	<b>5</b>
3.1	Code Tagging and Navigation . . . . .	5
<b>4</b>	<b>Structure</b>	<b>6</b>
<b>5</b>	<b>Best Practices</b>	<b>7</b>
<b>6</b>	<b>To-Do</b>	<b>8</b>
6.1	Customize Mode Line . . . . .	8
6.2	Disable cursor in pdf-view-mode . . . . .	8
6.3	Get much better at Gnus . . . . .	8
6.4	Flycheck doesn't work with C . . . . .	8
6.5	load-file from Emacs . . . . .	9
6.6	align-current AUCTeX . . . . .	9
6.7	Consider switching to sane-term from multi-term . . . . .	9
6.8	Single quote delimiter not working . . . . .	9
6.9	Command that closes all buffers for which underlying file was deleted . . . . .	9
6.10	Magit bug missing headers . . . . .	9
6.11	Verilog mode escape . . . . .	9
6.12	Verilog code tagging . . . . .	9
6.13	Better Code Tagging . . . . .	9
6.14	Make Comint mode behave more like term mode . . . . .	10
6.15	Create Add-On that allows you to edit Anki HTML in Emacs . . . . .	10
6.16	Get XWidget Webkit working . . . . .	10
6.17	Get LaTeX SVGs working in EWW . . . . .	10
6.18	Improve org-books . . . . .	10
6.19	Org Capture Extension . . . . .	10
6.20	Git Bug . . . . .	10
6.21	Eyebrowse . . . . .	10
6.22	Setup BBDB or other contact list for GNUs . . . . .	11
6.23	Company specifies backend for each completion . . . . .	11
6.24	Implement method to see what is causing lag in Emacs . . . . .	11
6.25	Create a new gdb many windows mode that spans 2 screens . . . . .	11
6.26	Set C modes indent automatically from clang-format . . . . .	11
6.27	Change company completion face . . . . .	11
6.28	Fix YCMD no flags error . . . . .	11
6.29	Keep company-box? . . . . .	11
6.30	Completion drop-down vs fill-in . . . . .	12

6.31	Improve GDB behavior for opening windows . . . . .	12
6.32	Enable ability in term mode when at command line to insert at point instead of going to end . . . . .	12
6.33	Prevent sudo directories from staying in recentf list . . . . .	12
6.34	Store source URL of book and write function to detect if changes have occurred . . . . .	13
6.35	Get helm-make working . . . . .	13
6.36	Code completion should ignore case . . . . .	13
6.37	Setup rr debugger with gdb interface . . . . .	13
6.38	Function to determine an installed packages dependencies . . . . .	13
6.39	Fix move-book command . . . . .	13

# Chapter 1

## Installation

I've fetched Emacs from the [GitHub mirror repository](#). The source code resides in `~/developer/software/emacs`. Installation instructions reside in the source directory in the file named "INSTALL". I've chosen to use a build directory named "build". From the build directory run configure with:

```
1 $ ../../configure --with-x-toolkit=gtk3 --with-mailutils \  
2 --with-imagemagick --with-xwidgets
```

I'm currently using version 26.1, by running:

```
1 $ git checkout emacs-26.1
```

There is some issue with highlighting in version 27.050 (potentially font-lock?) that makes it very annoying to write code. In general I should only use stable releases, which are specified on the [Emacs website](#).

## Chapter 2

# Package Setup

### 2.1 Gnus

Gnus was a huge pain to setup. I finally got it working with the information at this [link](#).

### 2.2 Term

Ansi term uses 8 colors for the terminal GUI. We can redefine these colors in an Emacs terminal by customizing their values with `M-x customize-group RET term RET`. The colors must also be configured in `~/.bashrc`.

## Chapter 3

# Functionality

### 3.1 Code Tagging and Navigation

# Chapter 4

## Structure

## Chapter 5

# Best Practices

[This Emacs manual page](#) contains principles to follow when customizing key bindings. Basically, `C-c <letter>` (but not `C-c` followed by another control character) as well as `<f5>` through `<f9>` are free for users to define how they wish.

# Chapter 6

## To-Do

### 6.1 Customize Mode Line

I can customize mode-line-format on a per-mode basis (see [this StackExchange question](#)). Also, see the [Emacs documentation](#) on the subject.

### 6.2 Disable cursor in pdf-view-mode

I'd like to disable the cursor when viewing a PDF. It's distracting and provides no value. I've tried these two additions to `init.el` to no avail:

```
1 (add-hook 'pdf-view-mode-hook
2         (lambda ()
3           (make-variable-buffer-local 'cursor-type)
4           (setq cursor-type nil)))
5 (add-hook 'post-command-hook
6         (lambda ()
7           (setq cursor-type (if pdf-view-mode t 'nil)))))
```

These are the links I've found that address related issues:

[How to change the cursor type and color?](#)

[Cursor parameters](#)

[How can I make the cursor change to block in overwrite mode?](#)

[Changing Cursor Dynamically](#)

[Cursor Display](#)

Instead of trying to get rid of the cursor, maybe just make its color the same as the background. Check out these links: [se](#) and [manual](#).

### 6.3 Get much better at Gnus

### 6.4 Flycheck doesn't work with C

I'm getting an error that the flag `-std=c++17` doesn't work with C. [This error seems somewhat similar](#).



## 6.5 load-file from Emacs

This causes cursor color to change and potentially other behavior as well.

## 6.6 align-current AUCTeX

align-current works well for tables with limited text. However, it propagates line breaks and so takes up a needless number of lines for long text sections that have to be manually adjusted. Also, I'd like to be able to run this globally for a whole buffer. The most similar action is align-entire but this aligns all tables to one another; I'd like aligning to be done on a per-table basis.

## 6.7 Consider switching to sane-term from multi-term

[sane-term](#) seems like it might be a better alternative to multi-term.

## 6.8 Single quote delimiter not working

Pressing ´ twice causes three single quotes to be inserted.

## 6.9 Command that closes all buffers for which underlying file was deleted

Probably better, just do this automatically. One worry is if file was accidentally deleted and buffer allows you to keep the file alive. Still, existing buffers shouldn't be used as a sort of backup.

## 6.10 Magit bug missing headers

I'm getting the error: "BUG: missing headers nil" when using magit with ghub. This is a known issue and is tracked [here](#). I guess the solution is to just wait for someone to fix it there.

## 6.11 Verilog mode escape

When in evil insert mode and the cursor position is after a reg or wire, pressing escape tries to vectorize the reg/wire instead of entering evil normal state.

## 6.12 Verilog code tagging

Verilog mode should have code tagging and navigation. See [this link](#) for ideas on code tagging.

## 6.13 Better Code Tagging

The problem with RTags is that it only works for C-based languages. gtags should work for many others. See [this link](#). It probably makes sense to use the [ggtags](#) interface. Also use the [helm interface](#). This may also be the wrong question, but maybe it's also possible to use rtags as a backend for a common gtags frontend?

## 6.14 Make Comint mode behave more like term mode

It's annoying that term mode and comint mode use different bindings for navigating command history (C-p and M-p, respectively). They should both use C-p. Additionally, find a way to use the equivalent of term-line-mode/term-char-mode for comint.

## 6.15 Create Add-On that allows you to edit Anki HTML in Emacs

Adapt [this](#) for your needs. That add-on should contain nearly all of the required functionality.

## 6.16 Get XWidget Webkit working

See [this](#).

## 6.17 Get LaTeX SVGs working in EWW

EWW is unable to render latex/mathjax directly and so renders the resulting svg instead. This appears as dark text on a dark background. See [this post](#).

## 6.18 Improve org-books

1. Query user for file when running org-capture and base title on that.
2. Make table of contents entries links to the corresponding page in the pdf.
3. Write a program to extract a table of contents from pdf. Run this automatically when running org-capture.
4. Bind org-capture to a keybinding.
5. Write scripts to get info from Goodreads and Amazon (Goodreads API [here](#)).
6. Add description property so that you can make comments on the quality (e.g. "Definitive book on GR").
7. Potentially use Wikipedia categories to categorize books in list and in directories.

## 6.19 Org Capture Extension

Consider using [org-capture-extension](#) which allows you to run org-capture from a browser.

## 6.20 Git Bug

Consider using [git-bug](#) instead of this file to track issues and improvements.

## 6.21 Eyebrowse

Use [eyebrowse](#) to easily navigate between Emacs workstations.

## 6.22 Setup BBDB or other contact list for GNUs

bbdb keeps a contact list that can be used in gnus. Set this up, or look for an alternative (potentially one that does not require manual additions). Note that there is also a company backend for this, company-bbdb.

## 6.23 Company specifies backend for each completion

It would be nice to be able to show backend used for each completion with company. This could be a configurable setting in company, for instance. Maybe look at company-box for a possible way to implement this.

## 6.24 Implement method to see what is causing lag in Emacs

It would be really nice to be able to see what is causing Emacs to lag in certain contexts. This could be enabled by calling a sort of record function and then disabling it when done. When the record function is toggled off, display a list of functions called and how much collective time they took, ordered by that time.

## 6.25 Create a new gdb many windows mode that spans 2 screens

This should also have a function to restore windows. It should delegate most responsibility to GDB.

## 6.26 Set C modes indent automatically from clang-format

Instead of automatically using a configured indent size and style (tabs or not) set it dynamically when entering a c-mode buffer based one of the following in descending order of preference: (1) the clang-format file used in that project, (2) the style already used and (3) your fallback style. This Emacs manual [link](#) should be useful. Also, look at this [reddit forum post](#).

Consider whether it makes sense to do this in other programming modes as well. How do those modes set the indentation style?

## 6.27 Change company completion face

The red text face used for company completion is ugly. Find a thematic alternative.

## 6.28 Fix YCMD no flags error

YCMD sometimes complains and repeatedly throws a flags missing error. Figure out what causes this (look at the YCMD code), then figure out how to solve it. This probably involves reconfiguration the ycm extra conf file.

## 6.29 Keep company-box?

Consider the functionality of company-box and potentially get rid of it.

## 6.30 Completion drop-down vs fill-in

Sometimes completions provide a drop-down and sometimes it doesn't and instead presents a sole completion as a differently colored rest of the word. What logic regulates this? Is it when only a single completion is available? Is this disadvantageous for a sole completion when the dropdown could also provide documentation for the completion?

## 6.31 Improve GDB behavior for opening windows

The current GDB split window behavior isn't great. It splits up existing windows into overly small sizes. I'm not exactly sure what I want here, but I'd like a strong priority given to the gdb buffer and the source buffer. In any event these two links should be helpful: [this](#) and [this](#).

## 6.32 Enable ability in term mode when at command line to insert at point instead of going to end

This would allow me to navigate in normal mode and then insert like normal.

```
1 (evil-collection-define-key 'normal 'term-mode-map (kbd "i")
2   (lambda ()
3     (interactive)
4     (if (eq (line-number-at-pos)
5             (+ (evil-count-lines (point-min) (point-max)) 1))
6         (let* ((col-str (what-cursor-position))
7                (col (string-to-number
8                      (when (string-match ".*column=" col-str)
7                     (replace-match "" nil nil col-str)))))
10          (progn (evil-insert-state)
11                 (term-send-end)
12                 (term-show-maximum-output)
13                 (let* ((col-new-str (what-cursor-position))
14                        (col-new (string-to-number
15                                  (when (string-match ".*column=" col-new-str)
16                                     (replace-match "" nil nil col-new-str)))))
17                   (while (> col-new col)
18                     (progn (execute-kbd-macro (kbd "C-b"))
19                            (message (format "%d %d" col col-new))
20                            (setq col-new (1- col-new))))))
21          (progn (evil-insert-state)
22                 (term-show-maximum-output))))
```

This doesn't work because edits made to the buffer line in term line mode are not affected in term-char mode. This would take a lot more work.

## 6.33 Prevent sudo directories from staying in recentf list

We can probably configure this with tramp, see [manual](#).

### **6.34 Store source URL of book and write function to detect if changes have occurred**

Use a hash function for this. Hopefully there's a way to do this without redownloading all files each time.

### **6.35 Get helm-make working**

See [here](#).

### **6.36 Code completion should ignore case**

Setup company in code completion modes to ignore entered case and fill in the correct case regardless.

### **6.37 Setup rr debugger with gdb interface**

See this [link](#) on setting it up. See this other [link](#) on what it can do.

### **6.38 Function to determine an installed packages dependencies**

Some package is using magit-popup which is causing a warning each time magit is used. Figure out which package. More generally, write a function to figure out which packages use a given dependency. Additionally, have another function to list all dependencies for a given input.

### **6.39 Fix move-book command**

Rewrite move-book to use the builtin bookmark-relocate command.