Introduction to Emacs

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Outline

What is Emacs?

- the extensible, customizable, self-documenting, real-time display editor
- An environment with a Turing-complete programming language (Emacs Lisp) designed around the manipulation of text
- Goes against the unix philosophy: one tool for everything
- The true hacker's editor

Emacs Highlights

- Edit files over many remote protocols (ssh, ftp etc.) as if local
- Extremely powerful text-based clients
    - Mail (mu4e, notmuch)
    - RSS (elfeed)
    - File Management (dired)
    - Git (Magit)
    - Kubernetes (kubernetes-el)
- Org-mode (Thesis writing, planning, cheatsheet)

Who Uses Emacs? [1]

- Julian Assange (Wikileaks)
- Yukihiro Matsumoto (Ruby)
- Guido van Rossum (Python)
- Rich Hickey (Clojure)
- Joe Armstrong (Erlang)
- Neal Stephenson (Writer)

In the GNU/Linux world there are two major text editing programs: the minimalist vi (known in some implementations as elvis) and the maximalist emacs. I use emacs, which might be thought of as a thermonuclear word processor... emacs outshines all other editing software in approximately the same way that the noonday sun does the stars. It is not just bigger and brighter; it simply makes everything else vanish. — Neal Stephenson, In the Beginning was the Command Line (1981)

Emacs at Amazon [2]

Mailman was the Customer Service customer-email processing application for ... four, five years? A long time, anyway. It was written in Emacs. Everyone loved it.

Keyboard Notations
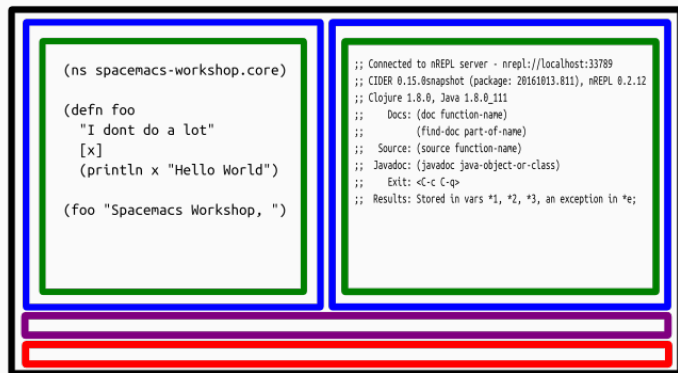
```
C-x Ctrl-x
M-x Alt-x
```

Basic Commands

`C-x C-c` Quit Emacs

`C-g` Cancel current command (spammable)

`C-h t` Emacs tutorial

C-h f, C-h v, C-h k Describe function, variable, keybinding

Emacs Terminology


```
(ns spacemacs-workshop.core)

(defn foo
  "I dont do a lot"
  [x]
  (println x "Hello World")

(foo "Spacemacs Workshop, ")
```

```
;; Connected to nREPL server - nrepl://localhost:33789
;; CIDER 0.15.0snapshot (package: 20161013.811), nREPL 0.2.12
;; Clojure 1.8.0, Java 1.8.0_111
;;     Docs: (doc function-name)
;;           (find-doc part-of-name)
;;   Source: (source function-name)
;;  Javadoc: (javadoc java-object-or-class)
;;     Exit: <C-c C-q>
;;  Results: Stored in vars *1, *2, *3, an exception in *e;
```

☐Frame ☐Window ☐Buffer

☐Status bar ☐Minibuffer

Emacs Tutorial

- `M-x` brings up the interactive command launch environment
- We want to launch `M-x help-with-tutorial`
- We can tab-complete here `M-x help-<TAB>`

Configuring Emacs

Configuring Emacs is the same as writing Emacs Lisp code to be evaluated during program launch time. Emacs looks for your init file in the following locations (in order):

- `~/.emacs`
- `~/.emacs.el`
- `~/.emacs.d/init.el` (preferred)

Installing packages i

Adding package mirrors
Emacs needs to know where to fetch packages from. Here we add 2 mirrors, the Org mirror and the MELPA mirror, where most community packages are hosted.

```
1  (require 'package)
2  (add-to-list 'package-archives '("melpa" .
   ↪ "https://melpa.org/packages/") t)
3  (add-to-list 'package-archives '("org" .
   ↪ "https://orgmode.org/elpa/") t)
4  (package-initialize)
```

Installing packages ii

We run M-x
package-refresh-contents
to pull new content from
the mirrors.
We can see a list of
packages to install by
running M-x
list-packages:

Exercise: Installing Counsel/Ivy
Ivy is a better interface for basic Emacs tasks.

Dired

- basic file management:
  - deleting, renaming, movement
- wdired

Org-mode

- Basic org syntax
- org-agenda
- org-babel
- org export
- deft

Magit

- commit
- log
- rebase
- spinoff
- stash

Common Plugins

project management projectile

directory view treemacs

code completion company-mode + lsp-mode

code editing aggressive-indent, smartparens, multiple-cursors

code navigation avy

Getting Productive Quickly

Vanilla Emacs is powerful, but often not powerful enough for day-to-day work. An easy way to get started is to use a starter kit:
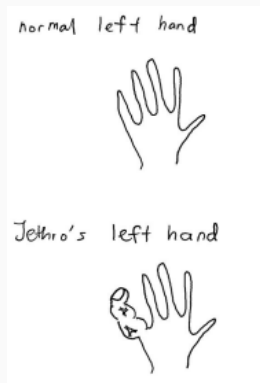
- prelude
- spacemacs
- doom-emacs
- Centaur Emacs

Evil-mode

If you like Vim's modal editing, consider evil-mode. Evil + Emacs allows you to fully emulate Vim's modal editing capabilities, alongside the power of scripting in Emacs Lisp.

Remap Capslock to Ctrl

This will save you from Emacs pinky.
Treat yourself to a good keyboard,
you're going to be using one heavily
in the foreseeable future.

Figure 2: Source [3]

Study Emacs Configurations

Emacs is a tinkerer's editor: make it your own. Scratch your itch, experiment with packages. Look at what other people use and see if you like them.

Emacsclient

Emacs start-up time is non-negligible (mine is around 3s), especially when you have a lot of packages and Elisp to evaluate. Solution: run emacs as a daemon, and launch clients that connect to it.

Join Communities

- r/emacs
- #emacs on IRC

Config Files

- jethrokuan/.emacs.d
- caisah/emacs.dz
- spacemacs
- doom-emacs
- Centaur Emacs

Books/Blogs

- Planet Emacslife
- Sacha Chua's Emacs News
- Mickey Petersen's Mastering Emacs

📄 Xah Lee.
Famous emacs users.
http://ergoemacs.org/misc/famous_emacs_users.html,
2018.
Online; accessed 19 October 2019.

📄 Steve Yegge.
tour-de-babel - steveyegge2.
https://sites.google.com/site/steveyegge2/tour-de-babel,
2004.
Online; accessed 18 October 2019.

📄 Jingyen.
Jethro's Left Hand.
Online; accessed 20 October 2019.