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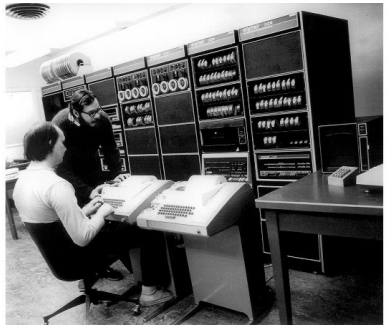
HPC-Café: Effective editing with Vim

Jan Eitzinger, 09.11.2021

Some history ☺

- Where it all started: **`ed`** line editor (1969, Ken Thompson, Bell Labs)

  the most user-hostile editor ever created



- **`ex`** line editor (1976, Bill Joy, 1BSD), there is still an **`ex`** mode in vim. **`ex`** included a visual mode that was the birth of **`vi`**.

- Vi Improved (**Vim**) (1991, Bram Moolenar, Amiga)

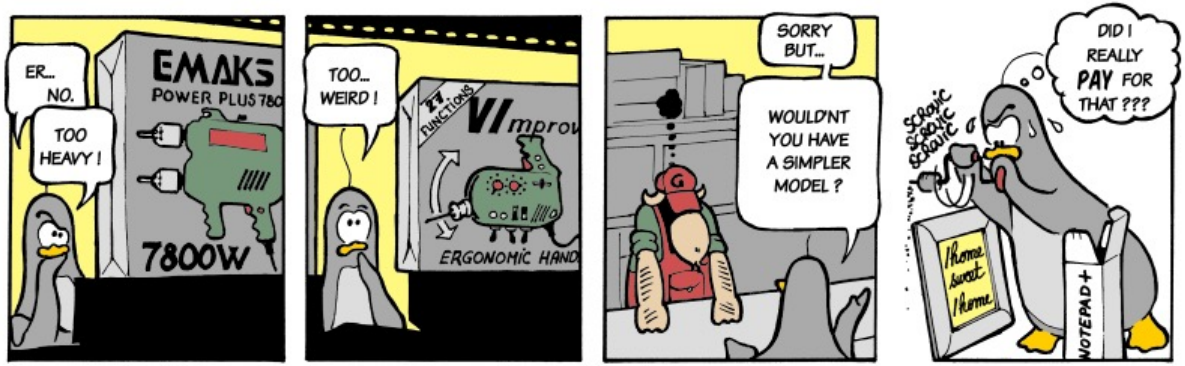
  Stevie (ST Editor for VI Enthusiasts) (1987, Tim Thompson, Atari ST)

Vim is by far the most popular vi clone!

What this talk is not about

- This is **no introduction** to vim! Not for beginners and not for advanced users.
- There will be **no** exhaustive **list of commands** and tips and tricks! Well, maybe a few.

This talk introduces the **mindset** and **habits** that **make vim a powerful tool**!



And don't worry. This will be a short talk! I hope …

Vim resources

- **`https://vimawesome.com`** Repository for vim plugins
- **`http://vimcasts.org`** Vim screencasts
- **`http://vimcolors.com`** Repository for vim color schemes
- **`https://vim.fandom.com/wiki/Vim_Tips_Wiki`** Vim tips repository

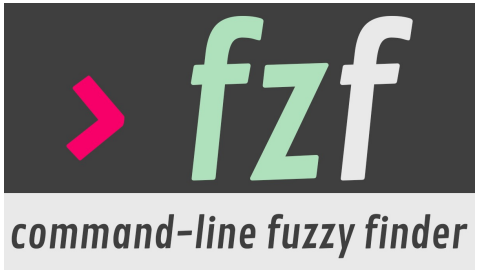
- Seven habits of effective text editing (with vim) by the master himself

`https://moolenaar.net/habits.html`

All those plugins and tools …

- Use a **plugin manager**! I use vim-plug:
  `https://github.com/junegunn/vim-plug`

- **Fuzzy find** everything!
  - General-purpose command-line fuzzy finder
    `https://github.com/junegunn/fzf`
  - Vim plugin to integrate fzf
    `https://github.com/junegunn/fzf.vim`
  - Fast recursive regex grep tool
    `https://github.com/BurntSushi/ripgrep`
  - Simple and fast find alternative
    `https://github.com/sharkdp/fd`



And more of it

- Use **completion**, a lot! And all with just **<TAB>**
  https://github.com/lifepillar/vim-mucomplete

- Use a **language server protocol** enabled **linter**
  https://github.com/dense-analysis/ale

- If you do not want to spent time fiddling (*Defaults everyone can agree on*)
  https://github.com/tpope/vim-sensible

- You ask for my (current) vim configuration? Here you go

Honorable mentions: vim-easymotion, autopairs, vim-unimpaired

Learning how to use vim is a constant process

- You should not and cannot learn all vim commands!
- Learn only those commands that make your editing more effective.

Basic steps

1. While editing, look for actions you spend quite a bit of time on.
2. Find an editor command that will do the action quicker.
3. Train using the command. Do this until it becomes a habit.

- **You must constantly learn and improve!**
- **Don’t overdo it!**
- **Use the excellent built-in docs!**

Some preliminary info for the demo

- This demo uses vim in my personal configuration!
  I will mark keystrokes that are not standard vim.

This demo is targeted at editing source code!

- Some specific adoptions in my configuration:
  - **<space>** is the leader key
  - **<tab>** maps to **<C-d>**: scroll down half a page
  - **<S-tab>** maps to **<C-u>**: scroll up half a page
  - **<leader>a** close quickfix windows
  - **<leader>q** close current buffer

Vim's power comes from adopting it to you and your requirements.

Make vim YOUR tool!

Part 1: The vim way

Vim is optimized for repetition! Make actions and movements **repeatable**!

Commands used:

<h> <j> <k> <l>	Move cursor one character left, down, up, right
<.>	Repeat last action (aka micro macro)
<A>	Compound command for **<$a>**
<f{char}>	Search forward for **{char}**
<;>	Repeat last movement
<s>	Delete character under cursor and enter Insert mode

Optimal case: One keystroke to move, one keystroke to execute!

Part 2: Act, Repeat, Reverse

- The act and repeat routine often leads to **trigger-happy** editing
- Vim makes it easy to **back out** where you **went to far**!

Commands used:

`<*>`	Search forward for word under cursor
`<cw>`	Change word under cursor
`<n>`	Cycle forward through matches
`<.>`	Repeat action
`<u>`	Reverse previous action
`<C-r>`	Reverse last undo
`<,>`	Reverse last search in line

Part 3: From great to awesome - On the fly macros

Commands used:

<qa>	Start recording macro and store to register **a**
<q>	Stop recording macro
<@a>	Playback macro in register **a**
<@@>	Playback last executed macro

Tips for robust macros

- Normalize cursor position
- Strike target with repeatable motion
- One step back can mean three steps forward

I map **<@q>** to **<Q>** in order to do the more memorable **<qq>**, **<q>**, **<Q>**

Part 4: Getting around within a file

- **Keep your hands on the home row!** There are no arrow keys ☺
- Navigate by searches and direct jumps

Commands used:

`<f{char}>`	Search forward in line for `{char}`
`</{pattern}>`	Search `{pattern}` forward in file
`<gg>`	Jump to start of file
`<G>`	Jump to end of file
`<zz>`	Center cursor position in window
`<{num}G>`	Jump to line
`<TAB>`	Scroll down half a page (default `<C-d>`)
`<S-TAB>`	Scroll up half a page (default `<C-u>`)

Part 4: Getting around within a file cont.

Commands used:

`<[>, <]>`	Jump to next, previous start of function block
`<%>`	Jump to matching braces

Using vim-easymotion plugin:

`<leader-s>`	Mark locations matching two characters

Use a tags browser! I use `https://github.com/preservim/tagbar`.

Part 5: Getting around within a project

- The Nerdtree plugin provides a nice file browser.
- Index your project using ctags!

Commands used:

`<C-]>`	Jump to definition of symbol under cursor
`<C-o>`	Jump back to previous location
`<leader>e`	FZF search files
`<leader>b`	FZF search open buffers
`<leader>g`	Recursive pattern search with ripgrep
`<leader>T`	Search tags

Part 6: Manage your screen

Vim has support for tabs. A tab may hold multiple windows.

I do not use tabs, ever.

Commands used:

`<:sp{lit}>`	Split screen horizontally
`<:vsp{lit}>`	Split screen vertically
`<C>h|j|k|l`	Move cursor to window on the left, bottom, top, right
`<arrow keys>`	Resize windows
`<leader>a`	Close all Quickfix/Location list windows

Part 7: Don’t be religious about this

- In some cases copy and paste with the mouse is the fastest option
- Vim supports all styles of editing, at least in the GUI versions

- Other editors (VSCode) often offer a vim editing mode

Other awesome features I did not talk about

- Visual Mode and Visual-Block Mode
- Registers for Copy/Paste and Macros
- Command mode
- Patterns and Search/Substitute commands
- Build integration and Quickfix list
- Built-in spell checker
- Other plugins I often use:
  - **`vim-fugitive`**
  - **`vim-interestingwords`**
  - **`vim-commentary`**
  - For the looks: **`lightline.vim`** and **`gruvbox`** color scheme