

Wrap Your Mind Around Vim 8.0

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0.1 ideas that need to be fit in somewhere

1. This book does not go into detail about how to use vim, just what it does. But because vim is so customizable, the how does not matter very much once you know which features you want to use, if it turns out that the way to do those things in vim takes a lot of keystrokes and are therefore not effective, you can remap keys or write scripts to get the same functionality in a totally customized way that works for you 2. section on how to learn and practice effectively. Use the vim help files and the internet. Integrate a few commands at a time take it slow at first, think of the most efficient way before you make an edit.

0.2 Purpose

The object of this book is to help the Vim user efficiently learn the tool by enumerating the vast capabilities of Vim 8.0 concisely and simply.

0.3 This Book's Unique Approach

This is not a 'HOW to use Vim' book. It is more of a 'this is WHAT Vim can do; now that you know what it does and what the features are technically called, you can easily learn how to use only the features of Vim that you actually care about on your own' book. The approach of this book is based on the premise that learning HOW to use a particular feature in Vim is easy; the hard part is figuring out the WHAT feature you want to learn. Once you know what the thing you want to do is and what it is called, all it takes some internet searching and some practice. Most people get stuck in Vim because they do not understand the capabilities of the tool or the technical terminology associated with it. Either the user does not know that Vim is capable of doing the thing they want or the user knows what they want and suspects that Vim can do it but has no idea what the feature is called. This book provides a straight forward, concise, and easy-to-understand way of enumerating WHAT Vim does so that you, the user, can get on with the easy part of learning HOW to use only the features you want.

0.4 Important Historical Perspective

When Vim was created, it was made by Bram for Bram, meaning: the engineer who developed Vim initially, developed it for his personal use. He developed the features that he personally wanted to use. As years went on and Bram continued developing, the community asked for other features that Bram did not necessarily care about. He implemented them anyway as long as he felt enough people would enjoy having them. After decades of development, Vim has become a vast collection of features. There are too many for any one person to really need or want or use them all. The vast set of features is meant to accomodate a vast set of users where each user only needs and/or wants a small subset of all features. It is for this reason that this book focuses on efficient learning of Vim rather than complete learning.

0.5 How Most People Learn Vim

Most people are thrust into Vi and/or Vim and are forced to frantically learn the basic editing commands. Chances are that if this is the case we are talking about an engineer or scientist; let's call him Steve. Steve realizes after learning hjkl cursor navigation that the impact of editor efficiency on his workflow is significant so Steve sets out to learn some more useful commands on the internet or perhaps a book. Unfortunately, most books for Vim are recipe books. They provide tutorial on specific features or describe great ways to solve common problems with Vim. These are great for picking up tricks but you will brush through many of these before learning the key set of Vim features that work best for you and the task you are applying them to. Steve gets tired of that pretty quickly. The internet can be very helpful if you know what you are looking for as long as you don't fall into a wormhole of the extremely mystifying power-user language. The weird dialog about buffers and Ex-mode etc. is easy enough for you to sift through but the real trouble for Steve is the former. When you start using Vim you have no idea what you want to learn because you have no idea what Vim can do! Even though Steve has a vague idea of what functionality he wants, he does not know the proper Vim terminology for the thing he wants to do. That makes searching for a how-to very hard. Naturally, this is where Steve stops learning and decides he is relatively content with getting by on his fair amount of editing efficiency. Every once in a while Steve sees his coworker doing something

slick in the editor and says, "hey...how did you do that?" Steve might also learn something new after getting fed up with doing some repetitive task and frantically searching the internet for a solution but Steve has the same key issue. Steve is smart and can learn to do just about anything, but when it comes to Vim he has no idea what it is that he needs to learn.

0.6 How You Ought To Learn Vim

- Understand what Vim has to offer.
- Pick a subset of key features you need to learn in order to have an efficient workflow for your specific task.
- Learn each of these features through the Vim User Manual, books, and/or the internet.
- Practice using them enough to commit them to muscle memory for a truly efficient workflow.

This is an efficient method of learning Vim or any tool. Only learn the features you actually care to use. Know what the tool can do so that later on down the road when you need some other functionality, you know what to look for.

0.7 How to Use This Book

You can read it straight through or you can skip to the parts you really care about. It will be valuable to at least skim all of the material so that you come a way with an understanding of the full scope of Vim capabilities. If you are mystified by the terminology in this book, see the Vim Terminology section in the back. That section will also give you a general scope and sense of how Vim is structured.

0.8 Vim Terminology

Buffers, word, WORD, motions, modes (normal, command, ex, insert, visual), commands, yank v copy, put v paste, registers, text objects, windows,

tabs, scripts, plugins, vimrc, dotfiles, NERDTree, Pathogen, Vundle, mapping, abbreviations, macros, autocommands, options, text object text object is like the w in cw command, one edit, movement command, pattern in context of searching, bottom-line command (includes searches and anything on bottom line that is not formally a command), the ex editor, toggle options (note the set option—nooption—option? syntax), set, map, ab, concept of word vs WORD, ctags, tag stacking or tag stacks, power user, transparent editing, session, instance of Vim, buffers (active, inactive, hidden, unlisted, modifiable, read-only, read errors), special buffers (quickfix, help, directory, scratch), alternate file (saved in the hashtag register) or alternate buffer, VIMRUNTIME dir, events, swp or swap files

0.9 Inner workings

General form of (page 21 O'Reilly Learning the Vi and Vim editors) (command)(number)(text object) or (number)(command)(text object) for change, delete, yank, and put what Vim puts in the registers (sometimes called buffers?) special registers, black hole register, append to reg, expression reg switching between modes concept of a word and WORD p 184 of Oualline concept of how vim interprets filenames, identifies and printing characters is related concept of an edit buffers tags priority and kind gvim menu items priority structure syntax groups and subgroups for coloring (are they used for anything else?) map overrides normal vim functionality order of initialization files like vimrc, exrc, etc. viminfo and retaining session state ctrl-Q and ctrl-S should be avoided in mappings because they are commands for the terminal to stop and start showing output; look into this +cmd argument; command line argument for vim that starts file at a line number or first instance of a pattern like this: vim +97 file.txt; also works for some vim commands

0.10 Vim Capabilities

Writing text basic insert/append completion whole line current file keywords dictionary option keywords initially dictionary option is empty; must add a dictionary file or multiple thesaurus option keywords initially thesaurus option is empty; must add a thesaurus file or multiple can search multiple

thesauruses possible to use a programming thesaurus i.e. retrieve getchar getcwd get_dirent getenv getgrent can get info in the pop up menu about which thesaurus each suggestion comes from current and included file keywords tags (ctags) filenames searches only current directory macros sleep command can be useful for pausing macro execution vim command completion (useful for developing scripts) user-defined through completefunc option omni-completion available for c, css, html, javascript, php, python, ruby, sql, xml, maybe more by now spelling suggestions generic complete with ctrl-N this does potentially all the other complete methods all in one the exact complete methods used are defined by the complete option where vim searches for words is managed by complete option path option defines where vim looks for files start inserting at nifty places end of line start of line; this can be first non blank char or first column regardless if it is blank beginning of new line above or below smart indenting :set autoindent (next line starts on same indent level on enter) indent in insert mode ctrl-t and ctrl-d automatically insert leading comment characters when writing a comment that exceeds length of line defined by wrapmargin or textwidth autoindent and smartindent cin-indent probably best for most programmers customization cinkeys: keys that trigger a reevaluation of indenting cinoptions: customizes a lot of the syntax related indenting behavior; look more into this cinwords: words that trigger a reevaluation of indenting (case sensitive regardless of ignorecase option) indentexpr defines an expression that is evaluated each time a new line is created in a file the expression evaluates to a number of indents for that line scripts exist in VIMRUNTIME for most languages already; use 'filetype plugin indent on' to use the appropriate one based on filetype regular indenting use tab in insert mode tab over syntax or otherwise defined blocks through various methods use command with number arg use comparator chars use ctrl-g and ctrl-t in insert mode inserting tabs vs spaces expandtab makes the TAB key insert spaces override this with CTRL-V before writing a tab (useful for Makefiles) combination of tabs and spaces is possible with softtabstop and smarttab and shiftwidth control size of tabs expandtab does not affect existing tabs but :retab command will convert tabs to whatever vim is currently configured to shiftround will make vim always tab to a column that is a multiple of shiftwidth insert x amount of something at once i.e. 3iabcESC writes abcabcabc put from register auto text wrapping (instead of hitting enter) read command !sort filter (:r !sort file-that-needs-sorting) alphanumeric sort lines registers hold anything, even edit commands registers hold read only metadata like filename create custom abbreviations for writ-

ing text with :ab auto generate matching "" " [] () HTML-tags etc. digraphs there are built in shortcuts for typing; just have to learn them ga will show you ascii number or char under cursor comments easily generate box outlines for box comments with abbreviations maybe use external program, boxes, to make comment boxes auto wrap comments this means when you are writing a comment, the editor will automatically input the comment leader on the next line does this work for languages other than c? managed by formatoptions option comment and uncomment blocks easily with block visual mode abbreviations use unix program fmt for formatting set formatprg=fmt write in foreign languages including right to left languages, farsi and hebrew also other languages; maps keyboard to other language characters; need to look into how this is done more insert the char right above or below the cursor with ctrl-y and ctrl-e in insert mode Cursor Navigation hjkl search and find as a motion moving vertically through wrapped line searching by word, sentence, paragraph, and section (can set different macros for identifying paragraphs, and sections) beginning/end of line moving to first non black char of line jump/goto to line by number (G or goto command) to column number with num prefix and — goto top, middle, or bottom line on screen (H, M, L) num prefix to go x lines away from top or bottom jump to matching or closest ([and more with to the nth percent of a file to the nth byte scrolling automatic scroll as you type passed bottom scroll by screen or half screen scroll by line with cursor in place scroll relative to cursor (zENTER, z., z-) scroll relative to any line (same as z with numeric prefix) scroll specified amount specified by scroll option control amount of scroll when cursor moving toward the edge of the screen return to previous cursor position save and goto invisible bookmark called mark see all marks with :marks special marks exist bookmarks are not stored in file; stored in session global marks transcend files within a vim session; what happens when combining other commands with a motion to a global mark? Editing text substitutions (regex support) global by line(s) confirmation context aware substitute global deletes, moves, and copies with :g and ex commands deletion command and all variations yank and put replace change and all of its variations: cw, cb, c2b, c0, C, etc type over existing text toggle upper/lower case copy/paste within a single file yank or delete into reg then put from reg copy/paste between files use ex commands or vi commands to save content to register (or just regular yank) then put (lose undo history when switch between files; use tabs instead) read command will copy a full file into the file you are editing copy/paste with basic point right lick method when smart indenting is on this can result in the progressively cascading in-

dent problem; solve with set paste? look into this transpose characters (xp) join lines joinspaces option will put two spaces in between sentences when joining move blocks of text with :g command and pattern matching (helpful if applies to tons of instances in same file hence :g) ex commands usually only useful when need to do something specific everywhere; otherwise there are easier ways to do things still useful to at least be aware of the way ex works and can be accessed in vim vim allows for extreme flexibility with pattern matching and basic move, copy, delete commands; one must open thier mind to these possiblities when faced with a huge repetative task it may be solved with one well-formed, probably long ex command nice examples on p84 of OREILLY filter text in file through Unix commands select text with Visual mode to perform an edit on it select with any vim cursor navigation technique select word, sentence, or paragraph that the cursor is in; ex. 4aw selects 4 words when in Visual mode select lines slect blocks (can't do this in your average gui editor) useful for tables insert, append, replace, or change text to multiple lines on the same column indent blocks repeat a visual selection with gv move cursor between beggining and end of selection write a sleection to a file pipe selection through unix program like sort: select text then use !sort in normal mode (performs operation on lines whether or not you are using visual line mode select mode behaves more like what 'normal' editors do; backspace to del or type to del and replace gh, gH, gctrl-h use mouse to do select mode with selectmode option set to mouse? can toggle between visual and select mode write right to left black hole register edit binary files -b delete up until predefined mark conifigure backspace key with backspace option justify text so that it looks nice; i.e. put line breaks in nice places automatically VIRUNTIME/macros/justify.vim gq does it gqmotion also works i.e. useful with paragraph motion gqip will do it to the paragraph from inside the paragraph instead of having to be on the first line or first char of paragraph align text; left right center :l,5 right 30 30 is the width so text will align right to column 30 rot13 encrypt with g?? edit a bunch of files the same way batch file i.e. a vim script containing a set of commands that you can run on a file from the unix command line Searching search forward/backward with wrapping or not (regex support) fuzzy find automatically search word under the cursor highlighting of search terms quick scrolling through search results combine search as motion command with c d p y find case sensitive option incremental search :set incsearch search history with arrow keys search for def of variable (local or global scope) jump to macro def display macro definition of macro under the cursor search for

a word under the cursor in the current file and any brought in by include directives: [CTRL-I,]CTRL-I search offset; change location of cursor when finding a search result; i.e. /keyword/b2 will put the cursor on the y of keyword when that keyword is found Workflow Environment windows (splits) from initialization or during session add/remove/switch windows displaying two instances of same file multi window ex commands move cursor from window to window resize windows size is in lines and columns; change to n value or +/- lines/columns options when you switch to a window it will auto resize to your winheight and winwidth option values equal always, cmdheight, winminwidth, winminheight move windows around display swap windows with retaining size or retaining window layout rotate windows of a column or row tabs can vim open silent tabs? tabnew, tabclose, tabonly, tabprev, tabnext, CTRL page up/down cycle from last tab straight to first and vis versa split search; same as * command except does it in a new split window; ctrl-w ctrl-i status lines for each window is a toggle :[n]split [++opt] [+cmd] filename equals always option to always make new windows equal size look into :new and the autocommands it executes :sview and :sfind; and generally add s to a lot of commands to get them to do the same thing in a split window look into conditional split commands p179 O'REILLY execute command on all windows with :wincmd open tag or file (on path defined in option variable, path) in new window or tab close windows quit, close, hide, and close all others hidden option windows can have their own status line or not customize vim stuff with env vars edit multiple files vim f1.txt f2.txt ... see files with :args use next and previous to shuffle through or shortcut to alternate file move around to different files with buffer switching commands save current session settings to vimrc file with :mkvimrc filename home dir dot file executed first then the one in cwd; possibility for different settings in different environments many ways to get vim to display current vim state (options, abbreviations, registers, etc.) ctags compatibility :tag command (look further into this) :tags shows list of tags that you have traversed through :tagselect shows instances of the same tag tag stacking related to jump stack tags option defines where vim looks for tags compatible with etags copy to system clipboard from Vim system clipboard register is "*" ? verify this in gvim this is default I think? verify! edit-compile-edit cycle with quick fix find out if this can be done in many languages, not just c compile from vim with :make filename define program used to make with makeprg option jump to location of errors easily move between locations of all the errors rename refactor with vimgrep and quick fix p 283 O'REILLY automatically jump to compile error

lines File management creating files opening/closing files opening files read only open file with cursor at position on line number on first occurrence of pattern on last line recovering edited buffers after crash swap files vim will try not to override swp files; it will name the next one swo then swn and so on control when swp file gets written; 4 seconds or 200 chars is default control where swp files are written; can be multiple files preserve command will write to swp write to open file or any file by name or create new file and write to it write or append part of a file to a new file open a bunch of files in one session and switch between them on one screen open file regardless of file type edit binary files; set the binary option for safer editing; this turns on/off some vim settings that make editing binaries safer but editing binaries is still not recommended file browsing delete and rename files and directories search thorough dir like a normal vim file open file in split window can you do a quiet open? where file goes into a new tab? directly edit compressed files and directories (transparent editing) configure vim to produce backup files automatically backup files specify location for backups with backupdir backup, writebackup, backupcopy, backupdir, backupnext options vim will add a ~ extension to backup files; manage the extension with backupext patchmode? difference between backup and write backup? if you are in a write protected file and you don't want to loose changes just write to another file from vim with :write filename teach vim new filetypes based on unfamiliar file extensions (ex. let vim know that a .inc extension is a C file) fileformats this has to do with file formats with regards to end of line chars; unix is line feed, apple is return and dos is both fileformats option manages this vim auto detects unix,apple,dos file formats regarding the end of line chars and is able to read all formats save a file in a different file format control whether or not files end with and EOL char with endofline option encryption key option holds your encryption key encrypt an existing file or new file vim encryption is weak when a file is changed by another program while you are editing and then you write, vim will give you a warning as ask if you want to continue remove white space at ends of lines with substitute command; suggestion is to rig an auto command to do this on write command tab completion :e :h etc. vim diff Undo/redo multi level undo/redo (aka infinite undo?) by default undolevels is 1000 undo by line repeat an edit (this is not redo; it is repeat edit) repeat an insert with ctrl-A special tricks for repeating substitutions p80 of OREILLY undo/redo branching; see usr32.txt Folding nested folds fold types syntax based use set foldmethod=syntax and set foldenable indent based use set foldmethod=indent use set foldlevel=n

to define how much you see and toggle foldlevel with zm and zr regex defined manually defined use any motion commands with a z command marker defined diff differences are folded operate folds recursively or one at a time (open, close, delete, toggle) (is toggle same as open/close?) look into fold-enable an dfoldlevel foldcolumns visual que on the left if you're into that execute command on a folded line will execute that command on every line in the fold keep manually defined fold with :mkview and :loadview edit files remotely scp, ftp, sftp, http, dav, rcp edit files that contain a given word vim 'grep -l 'special-term' '* save session state viminfo file managed by the viminfo option parameters save lines for each register up to n lines number of search pattern items to save number of command line commands to save max files vim will maintain info on contains command line history search string history input line history registers file marks last search and substitute patterns buffer list global variables mksession :mksession filename will save just about everything about the session into a file that can be sourced in a vim session later managed by sessionoptions option what you can save empty windows windows and tabs hidden and unloaded buffers current dir manually created folds, state of folds, local fold options global vars help window local options i.e. options set locally to a particular window or buffer options window sizes dir in which session file is located unix end of line format window position on the screen quick command history reference with ctrl-f in commandline configure vim to execute python, perl, tcl, and probably more inside of vim can make insert mode the default GUI wrap or no wrap for horizontal lines vim might shift lines left and right to make them fit? check this out slidescroll option limits such shifting sidescroll option may also be useful listchars option defines characters that act as visual cues for lines that have more content to left or right of the screen left/right scrolling? folding Color syntax highlighting (filetype detection beyond extension name) syntax defining files are in VIMRUNTIME/syntax column coloring colorschemes I recommend base16-3024 customize with colorscheme, highlight, and background options redefine coloring for syntax groups with highlight command :highlight will show you all coloring for all syntax groups customize syntax group coloring for specific file types by including it in an after script ex. for xml put a file called xml.vim in the /.vim/after/syntax dir that contains your highlight commands also put that dir in runtime path like this :set runtimepath+= /.vim/after/syntax create your own syntax file possibly for a custom file extension; in this case you can get vim to automatically detect your extension and use your syntax color test highlighting specific column(s)

search terms matching [(etc. line numbering normal numbers relative numbers redraw screen Ctrl-l mode indicator show white space chars with :list gvim basic point click and scroll you expect gvimrc checkout scrollbars; customizing them; use of scroll bars with multiple windows menus control order of root menus at the top (vim has a menu priority system including default menu priorities for existing menus that might be important to mention) control order of items within menus control spacing between menu items make your own menus and menu items that execute vim commands tear off menus toolbar treated similarly as a one dimensional menu uses bmp images as icons define tooltips for icons Windows gvim self installing executable basic copy/pasting is compatible with System clipboard look into gvim specific options Run Unix commands from vim :!command is this technically filter? mix this with motion commands :sh read output of unix command directly into file (:r !command) convert files to html with :TOhtml command show differences between two files vimdiff non unix vim versions come with a vim version of diff (unix of course uses the built in command) diffexpr option defines replacement expression Customization Vim script .vim scripts in vim runtime directories serve as good examples if/else inline, elseif and else are optional datetime support variables optionally explicitly define variable scope concatenate with . built in functions look into help file usr41.txt (has underscore after usr but tex hates it) for details on over 200 built in functions execute echo filetype detect exists define functions with/without args (can you use args?) call get function to call periodically statusline trick p.202 of O'REILLY better way? arrays dictionaries context conversion for variables (most notably string to int..verify this!) execute function based on filetype (autocommand) plugins basic ex scripting called from bash or :so possible to do complicated things if you know what you're doing sorting glossaries updating last mod time of the file changing tabwidth for different file types can use comments use spaces in ex commands to make them more readable execute script based on time of day everything you put in vimrc is technically vim script Autocommands execute arbitrary script on event happens decide which files will be subject to the autocmd script groups delete commands when they are no longer needed allows for dynamic changing of autocommands and which files they execute on can delete groups but make sure to delete all commands in group first autocommands are by default not triggered by other autocommands but you can specify that they can be if you want can choose to ignore events evaluating expressions (not only int math) increment and decrement integers even in octal and hex form nrformats manages which

number formats are recognized Remapping keys remap command mode keys :map remap insert mode keys :map! remap function keys that are mapped by the terminal (p.110 OREILLY) (look into this more) looks deeper into which exact keys can be remapped command combinations like ddp Macros (aka @-Functions) pre/post edit routines VIMINIT env var .vimrc for initialization state (and gvimrc; executed after vimrc if using gvim) .viminfo for session context can define scripts that run when exiting buffers pre and post scripts run automatically when switching buffers in the same session Regex support character classes [: :] collating symbols [. .] equivalence classes [= =] for substitution, regex works in search portion, some other constructs exist for the replacement portion matching beginning and end of words (not a general regex thing? only vim thing?) look into isident, iskeyword, isfname, magic, and isprint options going to have to look up most update vim 8.0 info on regex support and learn about regex in general a lot so that i can speak the regex language in the book Applied Vim to specific languages HTML Python Mouse compatibility behave option can help make mouse behavior more like the way you are use to Support Vim help files with tags vimtutor use K to open man page for word under cursor K takes a prefix number i.e. 2K to specify section number in the man page keywordprog option defines program that is executed by K i.e. man in unix keywordprog can be modified for example to nothing, signaling vim to use :help the iskeyword option defines what K defines as a word using vim to browse man pages is lame unless you run it through ul -i like this: man date — ul -i — vim; verify this alternatively use vim substitute to fix; maybe rig it up in a autocmd; Oualline p 167 Backwards compatible with vi Vim configurations when compiling Vim Vim resources I need to check out and maybe provide vi Lover's Home Page by Thomer M. Gil at <http://www.thomer.com/vi/vi.html> Vi Pages by Sven Guckes at <http://www.vi-editor.org> appendix A of O'REILLY contains important info about command syntax structure contains documentation of ex commands appendix B of O'REILLY contains documentation of some "most important" options tutorial from unix world magazine by walter zintz old url: <http://www.networkcomputing.com/unixworld/tutorial/009/009.html> Ways to access functionality gui command line args options ex commands mouse modelines; comments that define options automatically p268 Oualline