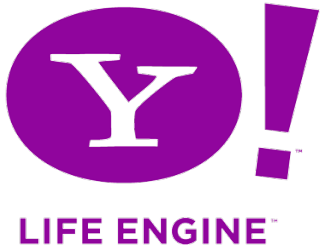
VIM for (PHP) Programmers

Andrei Zmievski
Yahoo! Inc

Vancouver PHP Conf ~ February 13, 2007



intro

- vim is incredibly powerful
- but you have to speak its language
- and it will do everything you can imagine
- languages in general are messy, ambiguous, and hard
- yet fantastically brilliant, for they allow us to communicate

intro

- how well do you know vim's language?
- what is the alphabet?
- look at your keyboard
- can you name what every key does?
- modes - what are they?
- how many do you know?
- how many do you use?

intro

if you don't like the language, change it

example: how do you quit vim quickly?

`ZZ` (exit with saving)

`ZQ` (exit without save)

or

```
:nmap ,w :x<CR>
```

```
:nmap ,q :q!<CR>
```

tip: `set showcmd` to see partial commands as you type them

where am i?

How do you tell where you are?

- simple - `CTRL-G`
- detailed - `gCTRL-G`
- do yourself a favor and `set ruler`
- shows line, column, and percentage in status line
- or configure it however you want with `'rulerformat'`

moving

- do you us `h/j/k/l` for moving?
- or are you stuck in GUIarrowy world?
- if you are, re-learn
- save yourself countless miles of movement between home row and arrows

moving

How do you move to:

- start/end of buffer? `gg` and `G`
- line n? `nG` or `ngg`
- n% into the file? `n%`
- the first non-blank character in the line? `^`
- first non-blank character on next line? `<CR>`
- first non-blank character on previous line? `-`

marks

- we can bookmark locations in the buffer
- `m<letter>` sets mark named `<letter>` at current location
- `` `<letter> `` jumps precisely to that mark
- `'<letter>` jumps to the line with the mark
- lowercase letter: mark is local to the buffer
- uppercase letter: mark is global, your buffer will be switched to the file with the mark
- `:marks` shows you your current marks

marks

- marks are very handy for changing text
- set a mark (let's say `ma`)
- then you can do:
  - `c`a` - change text from cursor to mark `a`
  - `d`a` - delete text from cursr to mark `a`
  - `='a` - reformat lines from current one to the one with mark `a`

marks

- let's say you jump somewhere
- how do you go back?
- `` moves you between the last two locations
- you can set ` (the context mark) explicitly:
  - m`, jump elsewhere, then come back with ``

tip: CTRL-O and CTRL-I move between positions in the full jump history, but can't be used as motions

'. and `. - jump to the line or exact location of the last modification

insert

- how many ways do you know of entering Insert mode?
- Let's see: `i I a A o O s S c C`
- Add `r R` for good measure
- And that's just single letter ones

insert

- `gi` - incredibly handy
- goes to Insert mode where you left it last time
- scenario: edit something, exit Insert, go look at something else, then `gi` back to restart editing

Some more goodies:

- `CTRL-Y` and `CTRL-E` (avoid work if you can)
  - inserts chars from above or below the cursor
- `CTRL-A` (oops, i want to do that again)
  - inserts previously inserted text
- `CTRL-R=<expr>` (built-in calculator)
  - inserts anything vim can calculate
- `CTRL-T` and `CTRL-D` (tab and de-tab)
  - inserts or deletes one shiftwidth of indent at the start of the line

delete

set your <Backspace> free

```
:set backspace=start,indent,eol
```

lets you backspace past the start of edit, auto-indenting, and even start of the line

search

- searching is essential
- movement and information
- how do you search?
- `f/F/t/T` anyone?
- how about `*` and `#`?

search

Search within the line:

- `f/F<char>` jumps to the first `<char>` to the right/left and places cursor on it
- `t/T<char>` jumps does the same, but stops one character short of it
- `df;` - delete text from cursor to the first `;` to the right
- `cT$` - change text from cursor up to the first `$` to the left

search

- often you want to find other instances of word under the cursor
  - `*/#` - find next/previous instance of whole word
  - `g*/g#` - find next/previous instance of partial word
- or find lines with a certain word:
  - `[I` and `]I` - list lines with word under the cursor
  - more convenient to use a mapping to jump to a line:

```
:map <F5> [I:let nr = input("Which one: ")
<Bar>exe "normal " . nr ."[\t"<CR>
```

search

- of course, there's always regexp search
- `/<pattern>` - search forward for `<pattern>`
- `?<pattern>` - search backward for `<pattern>`
- `n` repeats the last search
- `N` repeats it in the opposite direction
- vim regexp language is too sophisticated to be covered here

search

Control your search options

- `:set wrapscan` - to make search wrap around
- `:set incsearch` - incremental search, `<Enter>` accepts, `<Esc>` cancels
- `:set ignorecase` - case-insensitive search, or use this within the pattern:
  - `\c` - force case-insensitive search
  - `\C` - force case-sensitive search

search

- remember that every search/jump can be used as a motion argument
- `d/^#` - delete everything up to the next comment
- `y/^class/;?function` - yank everything from current point to the first “function” before the first “class”

replace

- `:[range]s/<pattern>/<replace>/{flags}` is the substitute command
- used mainly with range addresses
- range addresses are very powerful (read the manual)
- but who wants to count out lines and do something like `:-23,'ts/foo/bar/`
- in reality you almost always use a couple of shortcuts and Visual mode for the rest

replace

- useful range addresses:
  - `%` - equal to `1,$` (the entire file)
  - `.` - current line
  - `/<pattern>/` or `?<pattern>?` - line where `<pattern>` matches
- `:%s/foo/bar/` - replace first `foo` in each matching line with `bar` in the entire file
- `:.,/<\/body>/s,<br>,<br/>,gc` - fix `br` tags from current line until the one with `</body>` in it, asking for confirmation (`c` - 'cautious' mode)

replace

- `&` - repeat last substitution on current line
- `:&&` - repeat it with the flags that were used
- `g&` - repeat substitution globally, with flags

text objects

- better know what they are
- since they are fantastically handy
- can be used after an operator or in Visual mode
- come in "inner" and "ambient" flavors
- inner ones always select less text than ambient ones

text objects

- `aw, aW` - ambient word or WORD (see docs)
- `iw, iW` - inner word or WORD (see docs)
- `as, is` - ambient or inner sentence
- `ap, ip` - ambient or inner paragraph
- `a{, i{` - whole { .. } block or text inside it
- `a(, i(` - whole (..) block or just text inside it
- `a<, i<` - whole < .. > block or just text inside it

text objects

- there are some cooler ones
- `a', i'` - single-quoted string or just the text inside
- `a", i"` - double-quoted string or just the text inside
  - note that these are smart about escaped quotes inside strings
- `at, it` - whole tag block or just text inside (HTML and XML tags)

text objects

examples:

`das` - delete the sentence, including whitespace after

`ci(` - change text inside (..) block

`yat` - copy the entire closest tag block the cursor is inside

`gUi'` - uppercase text inside the single-quoted string

`vip` - select the paragraph in Visual mode, without whitespace after

copy/delete/paste

- you should already know these
- `y` - yank (copy), `d` - delete, `p` - paste after, `P` - paste before
- `]p, ]P` - paste after/before but adjust the indent
- Useful mappings to paste *and* reformat/reindent

```
:nnoremap <Esc>P  P'[v']=
:nnoremap <Esc>p  p'[v']=
```

registers

- registers: your multi-purpose clipboard
- you use them without even knowing
- every `y` or `d` command copies to a register
- unnamed or named
- `"<char>` before a yank/delete/paste specifies register named `<char>`

registers

- copying to uppercase registers append to their contents
  - useful for picking out bits from the buffers and pasting as a chunk
- `"wyy` - yank current line into register `w`
- `"WD` - cut the rest of the line and append it to the contents of register `W`
- `"wp` - paste the contents of register `w`
- `CTRL-Rw` - insert the contents of register `w` (in Insert mode)

registers

- there are some special registers
  - "0 - text from last yank command that didn't use a register
  - "1 - text from last delete command that didn't use a register (and was longer than one line, "- is used then)
  - "2 through "9 - text from delete commands before last one
  - ". - last inserted text
  - "% - name of the current file
  - "_ - black hole register (using it does not affect other registers)

registers

- you can record macros into registers
  - `q<char>` - start recording typed text into register `<char>`
  - next `q` stops recording
  - `@<char>` executes macro `<char>`
  - `@@` repeats last executed macro
- use `:reg` to see what's in your registers

undo

- original vi had only one level of undo
- yikes!
- vim has unlimited (limited only by memory)
- set `'undolevels'` to what you need (1000 default)

undo

- simple case: `u` - undo, `CTRL-R` - redo
- vim 7 introduces branched undo
- if you undo something, and make a change, a new branch is created
- `g-`, `g+` - go to older/newer text state (through branches)

undo

- you can travel through time
  - `:earlier Ns,m,h` - go to text state as it was `N` seconds, minutes, hours ago
  - `:later Ns,m,h` - go to a later text state similarly
- `:earlier 10m` - go back 10 minutes, before I drank a can of Red Bull and made all these crazy changes. Whew.

visual mode

- use it, it's much easier than remembering obscure range or motion commands
- start selection with:
  - `v` - characterwise,
  - `V` - linewise
  - `CTRL-V` - blockwise
- use any motion command to change selection
- can execute any normal or `:` command on the selection

visual mode

- Visual block mode is awesome
- especially for table-like text

tip: o switches cursor to the other corner, continue selection from there

- Once you are in block mode:
  - `I<text><Esc>` - insert `<text>` before block on every line
  - `A<text><Esc>` - append `<text>` after block on every line
  - `c<text><Esc>` - change every line in block to `<text>`
  - `r<char><Esc>` - replace every character with `<char>`

windows

- learn how to manipulate windows
- learn how to move between them
- `:new`, `:sp` should be at your fingertips
- `CTRL-W` commands - learn essential ones for resizing and moving between windows

tab pages

- vim 7 supports tab pages
- `:tabe <file>` to edit file in a new tab
- `:tabc` to close
- `:tabn`, `:tabp` (or `gt`, `gT` to switch)
- probably want to map these for easier navigation (if `gt`, `gT` don't work for you)

completion

- vim is very completion friendly
- just use `<Tab>` on command line
  - for filenames, set `'wildmenu'` and `'wildmode'` (I like "`list:longest,full`")
  - `:new ~/dev/fo<Tab>` - complete filename
  - `:help 'comp<Tab>` - complete option name
  - `:re<Tab>` - complete command
  - hit `<Tab>` again to cycle, `CTRL-N` for next match, `CTRL-P` for previous

completion

- `CTRL-X` starts completion mode in Insert mode
- follow with `CTRL-` combos (`:help ins-completion`)
- i mostly use filename, identifier, and omni completion
- when there are multiple matches, a nice completion windows pops up

completion

- CTRL-X CTRL-F to complete filenames
- CTRL-X CTRL-N to complete identifiers
- hey, that's so useful I'll remap <Tab>

```
" Insert <Tab> or complete identifier
" if the cursor is after a keyword character
function MyTabOrComplete()
    let col = col('.')-1
    if !col || getline('.')[col-1] !~ '\k'
        return "\<tab>"
    else
        return "\<C-N>"
    endif
endfunction

inoremap <Tab> <C-R>=MyTabOrComplete()<CR>
```

completion

- omni completion is heuristics-based
- guesses what you want to complete
- specific to the file type you're editing
- more on it later

maps

- incredibly powerful
- ...sometimes dangerous
- ...almost always obscure
- ...but consistently useful
- teach vim your own lingo
- `:help key-mapping`

maps

- maps for every mode and then some
- tired of changing text inside quotes?

```
:nmap X ci"
```

- make vim more browser-like?

```
:nmap <Space> <PageDown>
```

- insert your email quickly?

```
:imap ;EM me@mydomain.com
```

- make `<Backspace>` act as `<Delete>` in Visual mode?

```
:vmap <BS> x
```

options

- vim has hundreds of options
- learn to control the ones you need
- `:options` lets you change options interactively
- `:options | resize` is better (since there are so many)

sessions

- a session keeps the views for all windows, plus the global settings
- you can save a session and when you restore it later, the window layout looks the same.
- `:mksession <file>` to write out session to a file
- `:source <file>` to load session from a file
- `vim -S <file>` to start editing a session

miscellaneous

- `gf` - go to file under cursor (`CTRL-W CTRL-F` for new window)
- `:read` in contents of file or process
  - `:read foo.txt` - read in foo.txt
  - `:read !wc %:h` - run `wc` on current file and insert result into the text
- filter text: `:%!sort`, `:%!grep`, or use `:!` in visual mode
  - i like sorting lists like this: `vip:!sort`

miscellaneous

- use command-line history
- `:` and `/` followed by up/down arrows move through history
- `:` and `/` followed by prefix and arrows restrict history to that prefix
- `q:` and `q/` for editable history (`<Enter>` executes, `CTRL-C` copies to command line)

miscellaneous

- `CTRL-A` and `CTRL-X` to increment/decrement numbers under the cursor (hex and octal too)
- `ga` - what is this character under my cursor?
- `:set number` to turn line numbers on
- or use this to toggle line numbers:

```
:nmap <silent> <F6> set number!<CR>
```

- `:set autowrite` - stop vim asking if you want to write the file before leaving buffer
- `CTRL-E/CTRL-Y` - scroll window down/up without moving cursor

miscellaneous

- `:set scroloff=N` to start scrolling when cursor is `N` lines from the top/bottom edge
- `:set updatecount=50` to write swap file to disk after 50 keystrokes
- `:set showmatch matchtime=3` - when bracket is inserted, briefly jump to the matching one
- in shell: `fc` invokes vim on last command, and runs it after vim exits (or `fc N` to edit command `N` in history)
- `vimdiff` in shell (`:help vimdiff`)

help

- learn how to get help effectively
- `:help` is your friend
- use `CTRL-V` before a `CTRL` sequence command
- use `i_` and `v_` prefixes to get help for `CTRL` sequences in Insert and Visual modes
- use `CTRL-]` (jump to tag) and `CTRL-T` (go back) in help window

customization

- customize vim by placing files in you ~/.vim dir
- `filetype plugin on`, `filetype indent on`

```
.vimrc - global settings
.vim/
   after/          - files that are loaded at the very end
      ftplugin/
      plugin/
      syntax/
      ...
   autoload/       - automatically loaded scripts
   colors/         - custom color schemes
   doc/            - plugin documentation
   ftdetect/       - filetype detection scripts
   ftplugin/       - filetype plugins
   indent/         - indent scripts
   plugin/         - plugins
   syntax/         - syntax scripts
```

php: linting

- vim supports arbitrary build/lint commands
- if we set `'makeprg'` and `'errorformat'` appropriately..

```
:set makeprg=php\ -l\ %

:set errorformat=%m\ in\ %f\ on\ line\ %l
```

- now we just type `:make` (and `<Enter>` a couple of times)
- cursor jumps to line with syntax error

php: match pairs

- you should be familiar with `%` command (moves cursor to matching item)
- used with `()`, `{}`, `[]`, etc
- but can also be used to jump between PHP and HTML tags
- use matchit.vim plugin
- but `syntax/php.vim` has bugs and typos in the matching rule
- i provide my own

php: block objects

- similar to vim's built-in objects
  - `aP` - PHP block including tags
  - `iP` - text inside PHP block

examples:

  - `vaP` - select current PHP block (with tags)
  - `ciP` - change text inside current PHP block
  - `yaP` - copy entire PHP block (with tags)
- provided in my .vim/ftplugin/php.vim file

php: syntax options

- vim comes with a very capable syntax plugin for PHP
- provides a number of options
  - `let php_sql_query=1` to highlight SQL syntax in strings
  - `let php_htmlInStrings=1` to highlight HTML in string
  - `let php_noShortTags = 1` to disable short tags
  - `let php_folding = 1` to enable folding for classes and functions

php: folding

- learn to control folding
  - `zo` - open fold (if the cursor is on the fold line)
  - `zc` - close closest fold
  - `zR` - open all folds
  - `zM` - close all folds
  - `zj` - move to the start of the next fold
  - `zk` - move to the end of the previous fold

php: tags

- for vim purposes, tags are PHP identifiers (classes, functions, constants)
- you can quickly jump to the definition of each tag, if you have a tags file
- install Exuberant Ctags
- it can scan your scripts and output tags file, containing identifier info
- currently does not support class membership info (outputs methods as functions)

php: tags

- use mapping to re-build tags file after editing

```
nmap <silent> <F4>
        \ :!ctags-ex -f %:p:h/tags
        \ --langmap="php:+.inc"
        \ -h ".php.inc" -R --totals=yes
        \ --tag-relative=yes --PHP-kinds=+cf-v %:p:h<CR>

set tags=./tags,tags
```

- all PHP files in current file's directory and under it recursively will be scanned

php: tags

- `CTRL-]` - jump to tag under cursor
- `CTRL-W CTRL-]` - jump to tag in a new window
- `:tag <ident>` - jump to an arbitrary tag
- `:tag /<regexp>` - jump to or list tags matching `<regexp>`
- if multiple matches - select one from a list
- `:tselect <ident>` or `/<regexp>` - list tags instead of jumping
- `CTRL-T` - return to where you were
- See also taglist.vim plugin

php: completion

- vim 7 introduces powerful heuristics-based omni completion
- `CTRL-X CTRL-O` starts the completion (i map it to `CTRL-F`)
- completes classes, variables, methods in a smart manner, based on context

php: completion

- completes built-in functions too
- function completion shows prototype preview
  - `array_<CTRL-X><CTRL-O>` shows list of array functions
  - select one from the list, and the prototype shows in a preview window
  - `CTRL-W CTRL-Z` to close preview window

php: completion

- switches to HTML/CSS/Javascript completion outside PHP blocks
- see more:
  - `:help ins-completion`
  - `:help popupmenu-completion`
  - `:help popupmenu-keys`

plugins

- vim can be infinitely customized and expanded via plugins
- there are thousands already written
- installation is very easy, usually just drop them into .vim/plugin
- read instructions first though

netrw

- makes it possible to read, write, and browse remote directories and files
- i usually use it over ssh connections via scp
- need to run ssh-agent to avoid continuous prompts for passphrase
- don't use passphrase-less keys!
- once set up:
  - `vim scp://hostname/path/to/file`
  - `:new scp://hostname/path/to/dir/`

NERDTree

- similar to netrw browser but looks more like a hierarchical explorer
- does not support remote file operations
  - `:nmap <silent> <F7> :NERDTreeToggle<CR>`

taglist

- provides an overview of the source code
- provides quick access to classes, functions, constants
- automatically updates window when switching buffers
- can display prototype and scope of a tag
- requires Exuberant Ctags

taglist

- stick this in ~/.vim/after/plugin/general.vim

```
let Tlist_Ctags_Cmd = "/usr/local/bin/ctags-ex"
let Tlist_Inc_Winwidth = 1
let Tlist_Exit_OnlyWindow = 1
let Tlist_File_Fold_Auto_Close = 1
let Tlist_Process_File_Always = 1
let Tlist_Enable_Fold_Column = 0
let tlist_php_settings = 'php;c:class;d:constant;f:function'
if exists('loaded_taglist')
    nmap <silent> <F8> :TlistToggle<CR>
endif
```

snippetsEmu

- emulates some of the functionality of TextMate snippets
- supports many languages, including PHP/HTML/CSS/Javascript
- by default binds to <Tab> but that's annoying
- need to remap the key after it's loaded
- put this in ~/.vim/after/plugin/general.vim

```
if exists('loaded_snippet')
    imap <C-B> <Plug>Jumper
endif
inoremap <Tab> <C-R>=MyTabOrComplete()<CR>
```

php documentor

- inserts PHP Documentor blocks automatically
- works in single or multi-line mode
- doesn't provide mappings by default
- read documentation to set up default variables for copyright, package, etc
- put this in ~/.vim/ftplugin/php.vim

```
inoremap <buffer> <C-P> <Esc>:call PhpDocSingle()<CR>i
nnoremap <buffer> <C-P> :call PhpDocSingle()<CR>
vnoremap <buffer> <C-P> :call PhpDocRange()<CR>
let g:pdv_cfg_Uses = 1
```

xdebug-ger

- allows debugging with xdebug through DBGp protocol
- fairly basic, but does the job
- vim needs to be compiled with +python feature
- see resources section for documentation links

vcscommand

- provides interface to CVS/SVN
- install it, then `:help vcscommand`

conclusion

- vim rules
- this has been only a partial glimpse
- from my very subjective point of view
- don't be stuck in an editor rut
- keep reading and trying things out

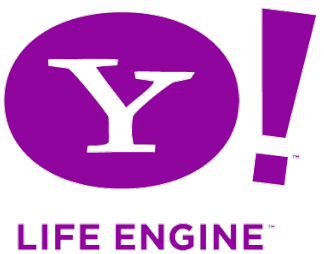
resources

- vim tips: http://www.vim.org/tips/
- vim scripts: http://www.vim.org/scripts/index.php
- Exuberant Ctags: http://ctags.sourceforge.net
- article on xdebug and vim: http://2bits.com/articles/using-vim-and-xdebug-dbgp-for-debugging-drupal-or-any-php-application.html
- more cool plugins:
  - Surround: http://www.vim.org/scripts/script.php?script_id=1697
  - ShowMarks: http://www.vim.org/scripts/script.php?script_id=152
  - Vim Outliner: http://www.vim.org/scripts/script.php?script_id=517
  - Tetris: http://www.vim.org/scripts/script.php?script_id=172

"As with everything, best not to look too deeply into this."

— me, i think

Thank You!



http://www.gravitonic.com/talks/