

Your Codebase:

How to get to where you want to be in it.

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Set up your space

- You can ssh into your VM
- `ssh jharvard@192.168.xxx.yyy`

Set up your space

- `alias os161-build='cd ~/cs161/
os161/kern/compile/ASST1; bmake &&
bmake install'`
- `alias os161-run='cd ~/cs161/root;
sys161 kernel'`
- `alias os161='os161-build && os161-
run'`

Searching

Searching in files

- `git grep [pattern]`
 - e.g., ``git grep -e 'PATH_MAX' --and -e '#define'``

Searching by filename

- `find [rootdir] -name [glob]`
 - e.g., ``find kern/arch -name "*.S"``
- `tree | less`
 - use `/` to search

Brief Interlude

vim

- “modal editing”
- Normal mode
 - Optimizes for movement and editing
 - Modular commands
- Insert mode
 - Time spent coding >> time spent typing

vim

- You don't have to use vim
 - Do use an editor with powerful features
 - Do good at using your tools
- Languages are a kind of devtool

vim basics

- `h/j/k/l` to move ←/↓/↑/→
- `i` for Insert mode; `Esc` for Normal mode
- `A` to append to a line
- `:w` to save, `:q` to quit

vim basics

- **p** (paste), **r** (replace), **f** (find), **.** (repeat)
- operators: **d** (delete), **cf** (change), **y** (yank), ...
- motions: **w**, **5j**, **t_**, **fi{**, ...

vim basics

- `:help`

vim resources

- `$> vimtutor`
- <http://www.viemu.com/a-why-vi-vim.html>
- <http://zmievski.org/files/talks/codeworks-2009/vim-for-php-programmers.pdf>

Moving Within Files

Moving around

- `C-f` to page forward, `C-b` to page backward
- `gg` to go to top, `G` to go to bottom
- `/...` to search for a regex (weird syntax)
- `nG` or `:n` to go to line *n*
- `%` to find matching delimiter
- `gi` to go back to where you last inserted

Marks

- `m<letter>` to set a mark at cursor
- ``<letter>` to return to it
- `'<letter>` to return to the line
- Use viminfo to return to where you left off after quitting

Splits

- `:vsp` to create vertical split
- `:sp` to create horizontal split
- `C-w h/j/k/l` to move between them

Moving Between Files

gf

- Jump to the filename under the cursor
- `:set path=...` to handle `#include`'s
- `C-o` to go back (“out”), `C-i` to go forward (“in”)

ctags

- Run ``ctags -R`` from `os161/`
 - Maybe add a make rule
- `C-]` over a symbol to jump to its definition
- `C-w ]` to jump to it in a new hsplrit
- `C-t` to backtrack along the tag stack

Plugins

- Add awesome features to vim
- Use pathogen (<https://github.com/tpope/vim-pathogen>) to manage plugins
- Install plugins in `~/.vim/bundle`

NERDTree

- vim plugin
- `:NERDTreeToggle` to open interactive directory tree in a vsplit
- `o` or `<Enter>` to expand a directory or open a file
- <https://github.com/scrooloose/nerdtree>

Fugitive

- vim plugin
- Integrates lots of git commands
- <https://github.com/tpope/vim-fugitive>

.vimrc

- <https://gist.github.com/mxw/4724820>
- See <https://github.com/mxw/dotfiles/blob/master/vimrc> for my full config
 - It's heavily documented!
- Feel free to ask on Piazza or email!

Wrap-up

The bottom line

- **What you *use* to code** is important for the same reason **what you code *in*** is important
- Don't just skate by with nano and cd