

# INTRO TO LINUX SERVER & CCR

## SESSION 04

By: Ningji Wei

November 15, 2018



# Well Done!

**Basics:**

know how to finish common tasks in CCR

- ☒ Connect to CCR
- ☒ Filesystem Operations
- ☒ CCR Operations
- ☒ File Transfer



## Contents:

1. Introduction to Linux Server & CCR
2. Linux Basics (Commands & Tricks)
3. Run Jobs in CCR
4. Intro to Advanced Session
5. Advanced Tools



# Linux:



# Linux: Is About Free and Open



# Linux: Is About Free and Open

transition of mentality



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How can I learn stuff to  
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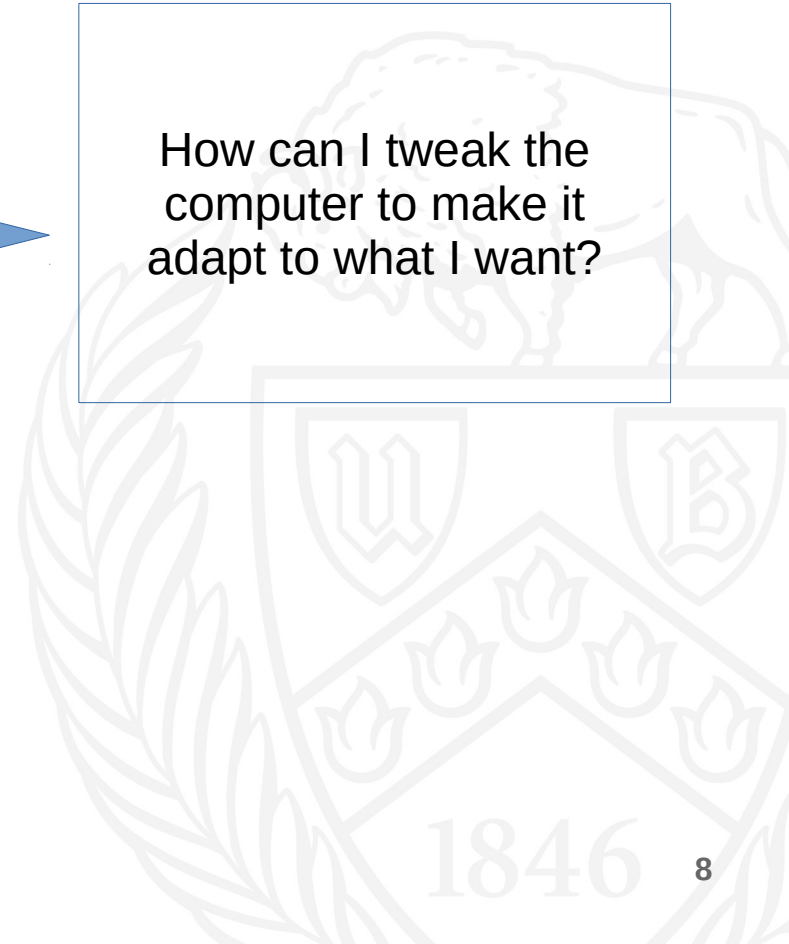
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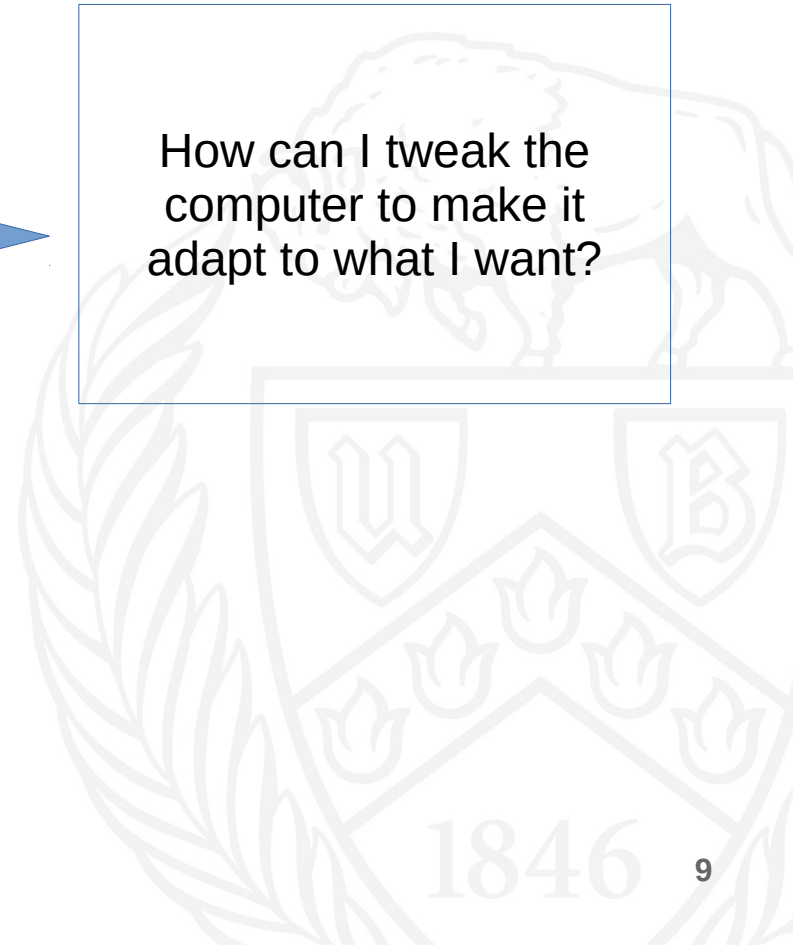
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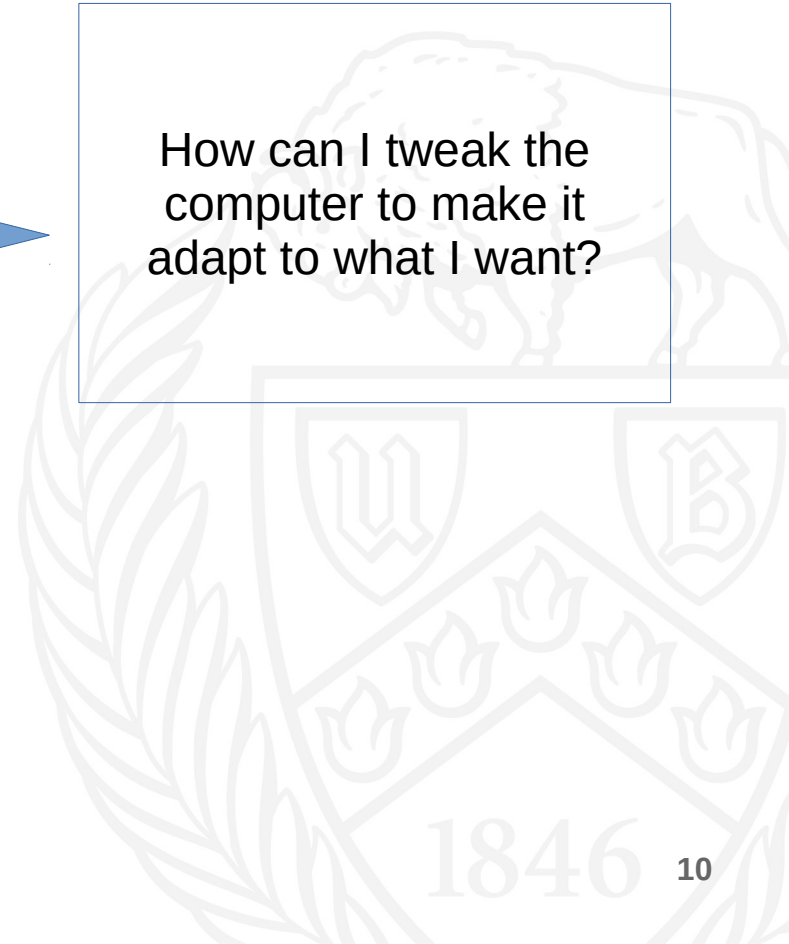
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- Practice it on your own!

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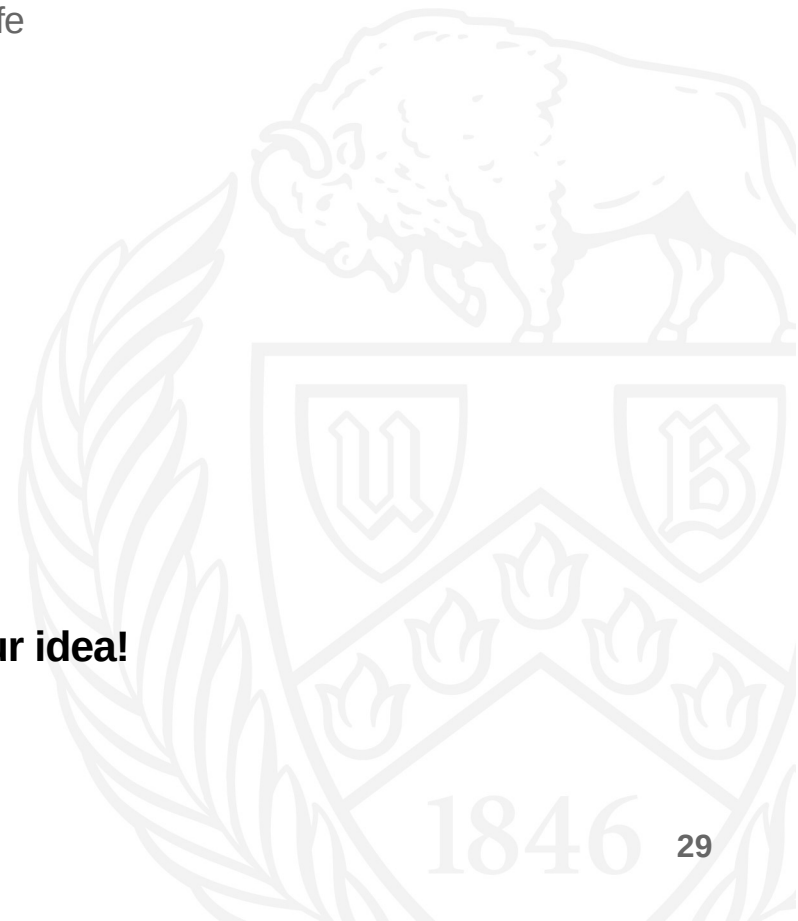
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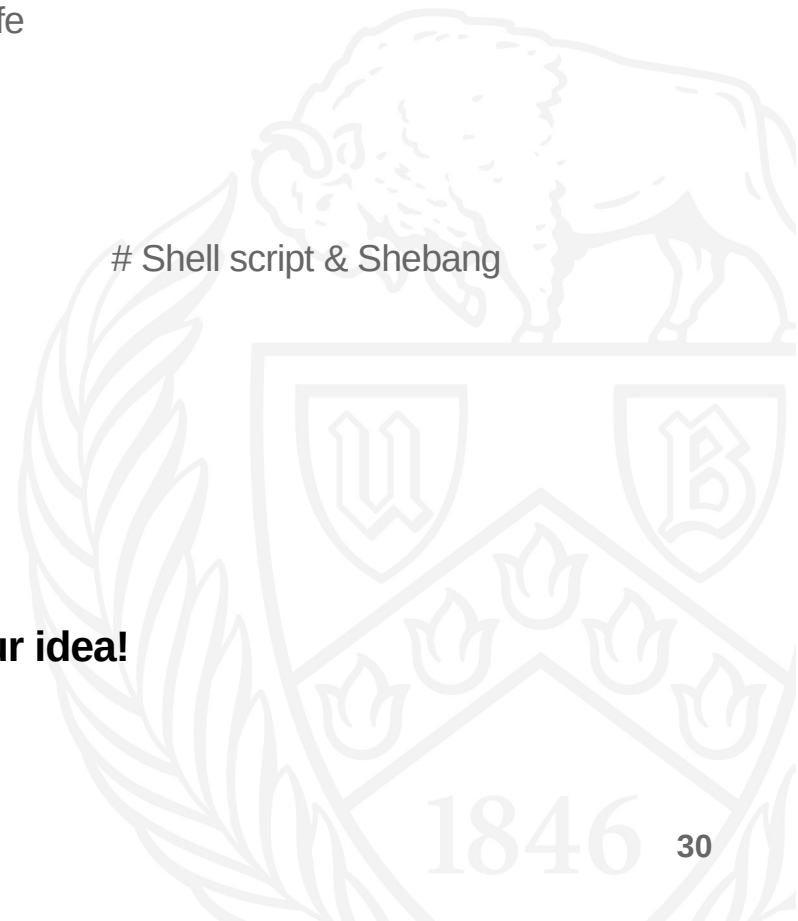
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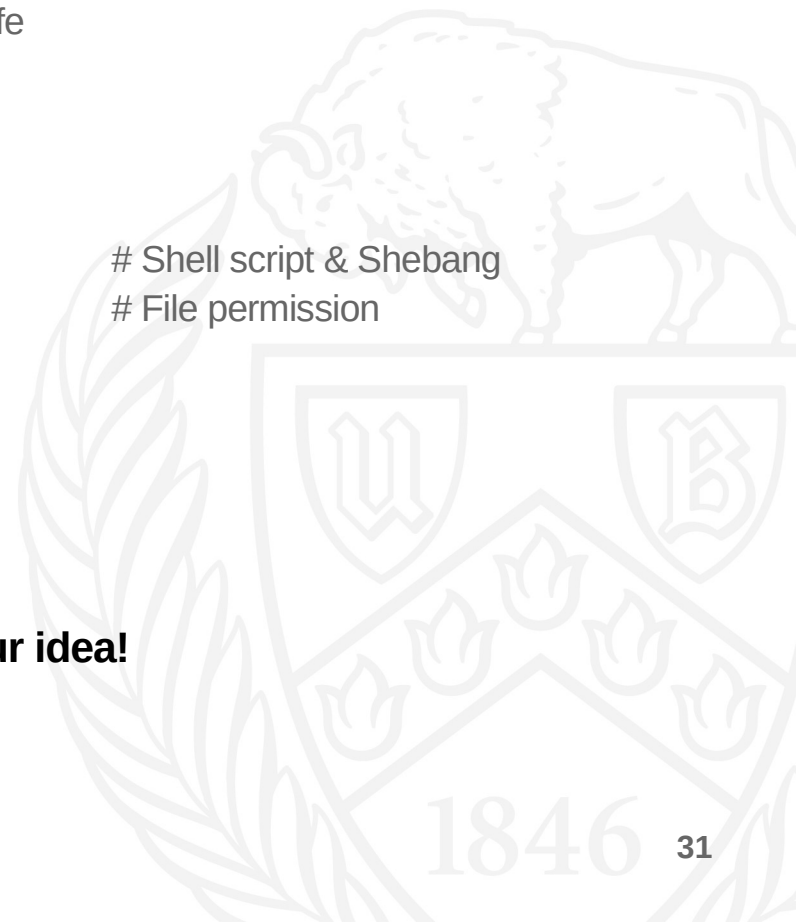
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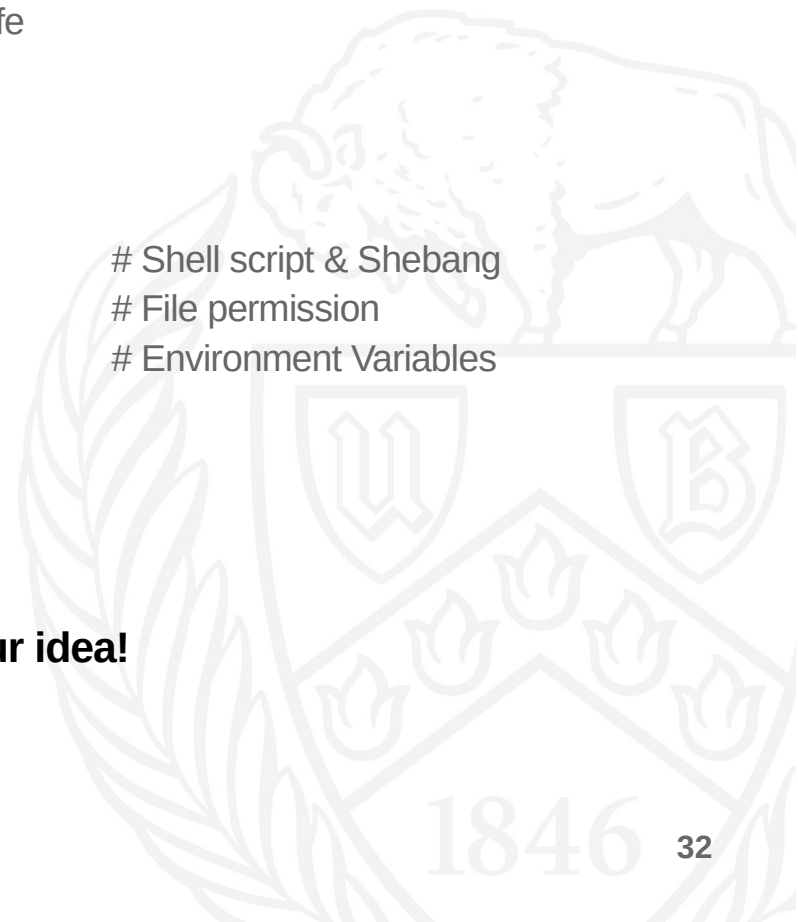
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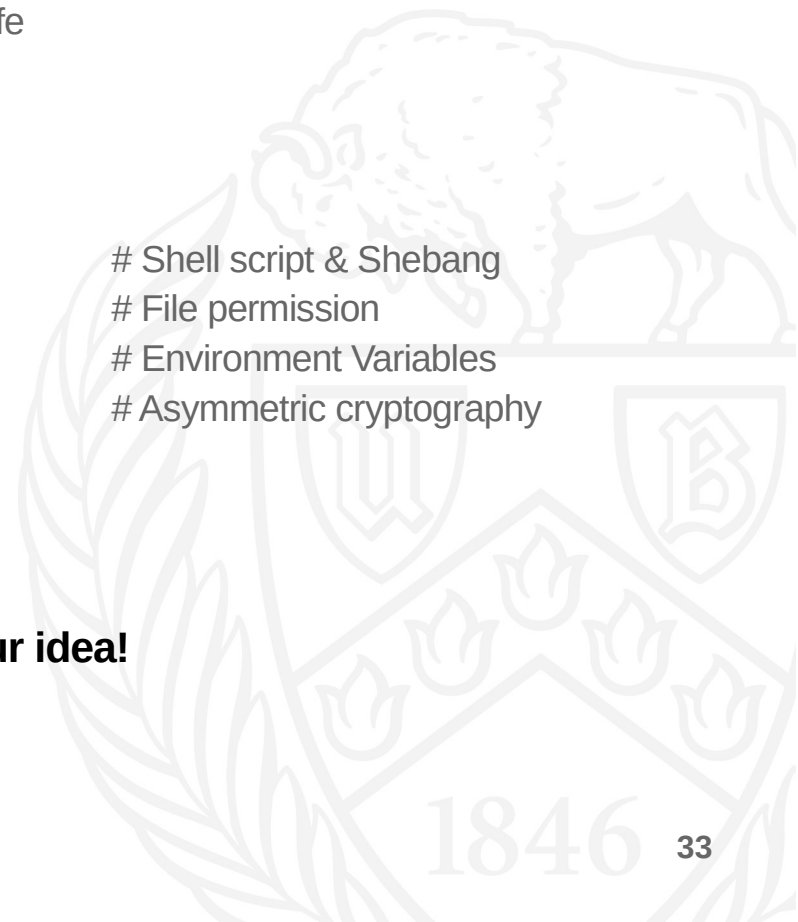
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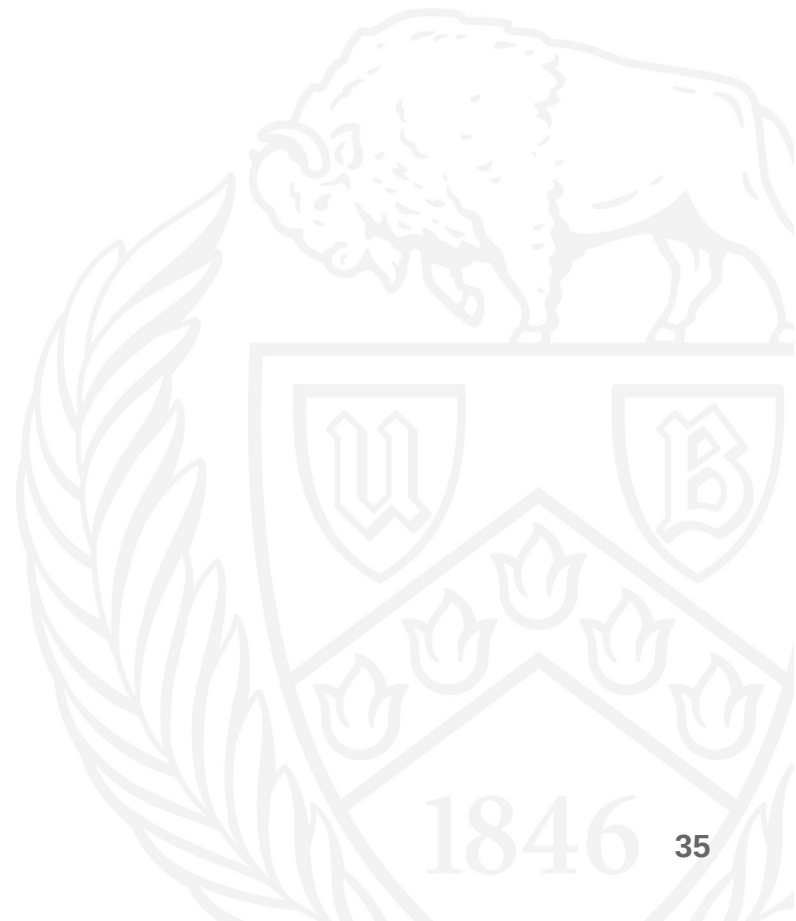


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## Coding IDE

- File manager

## Job monitor

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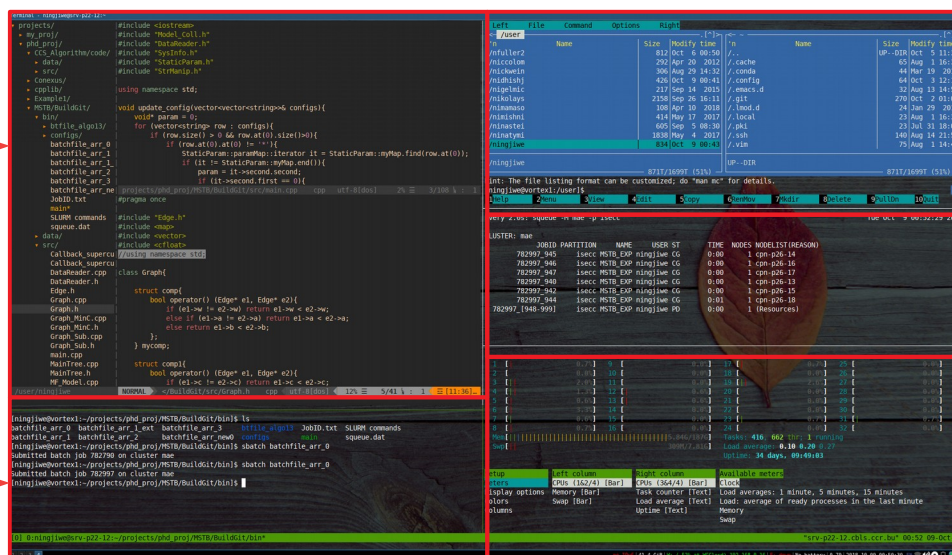
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## Toolset:

- Resources monitor: Htop
- File Manger: Midnight Commander
- Multitasking: Tmux
- Text Editor: Vim
- Console Debugger: gdb, jdb, pdb ...

# System Monitoring App: Htop



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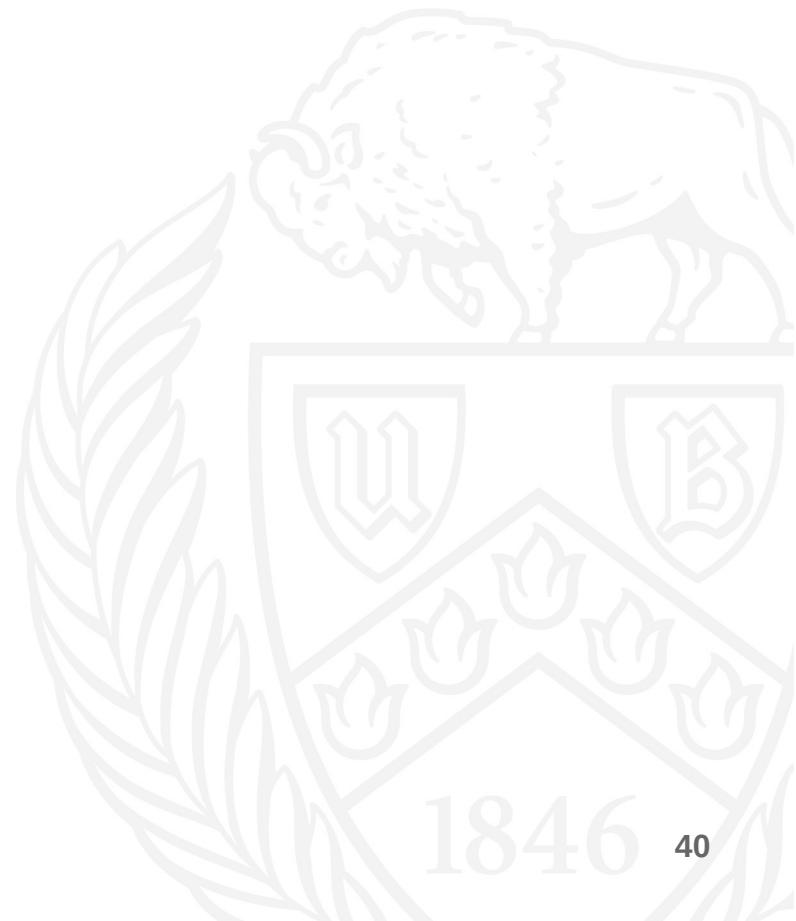
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## Cheat sheet for htop:

- <https://www.maketecheasier.com/power-user-guide-htop/>



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## Useful keyboard shortcuts:

- C-o: switch between mc and console
- Tab: jump between panels
- C-t/Insert: select/unselect item
- Alt-.: show/hide hidden files
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## Cheat sheet for mc:

- <https://www.cheatography.com/hank/cheat-sheets/midnight-commander/>





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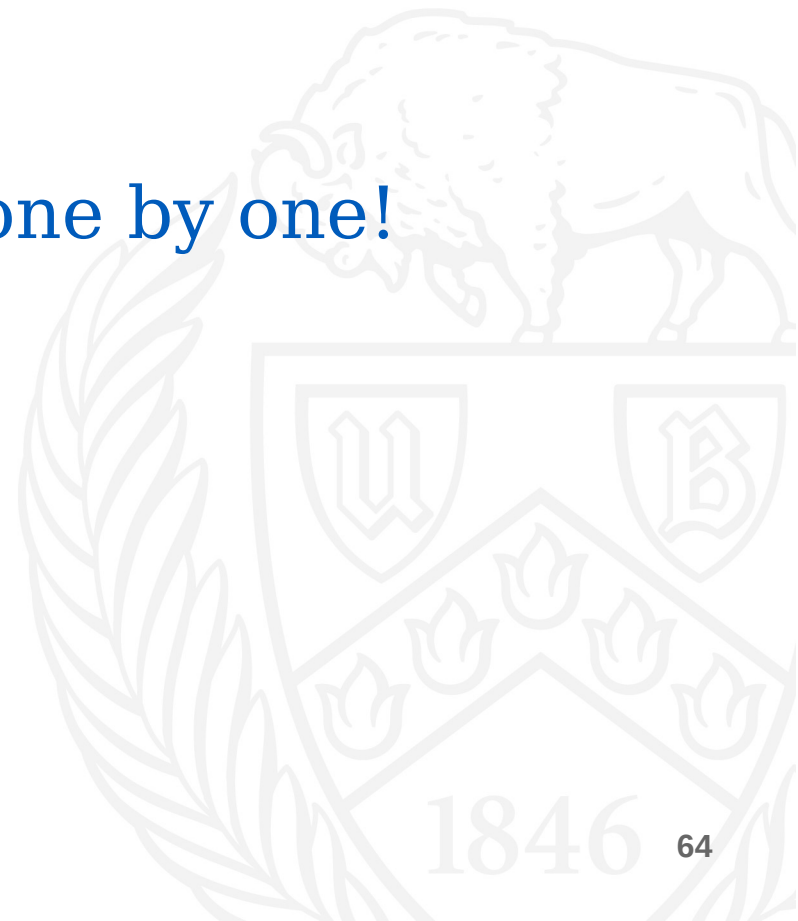


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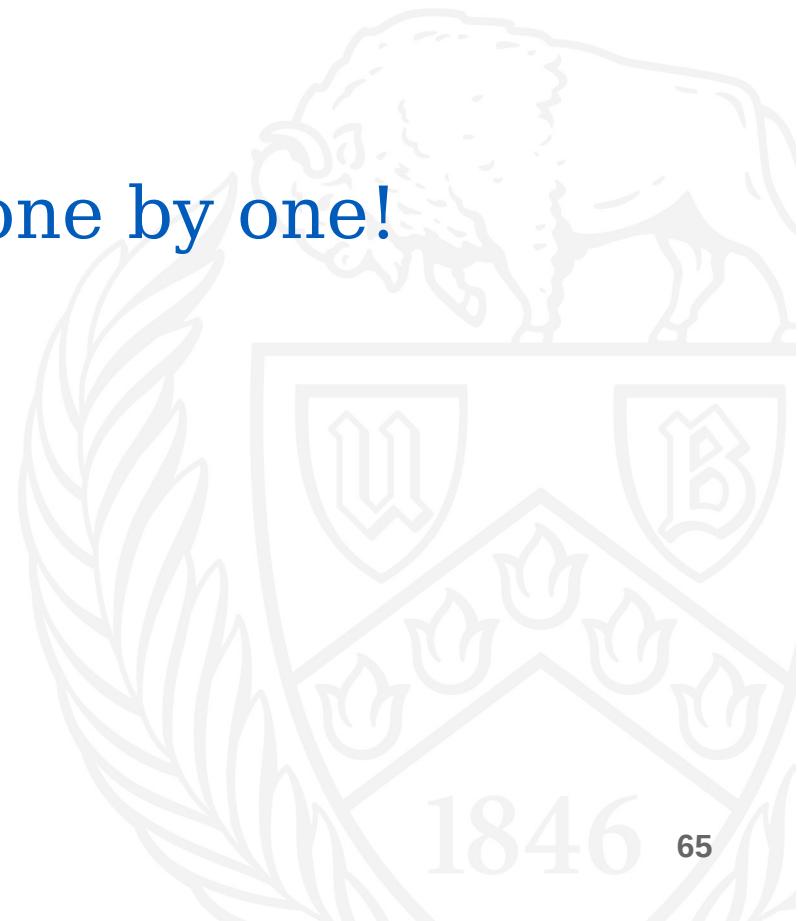
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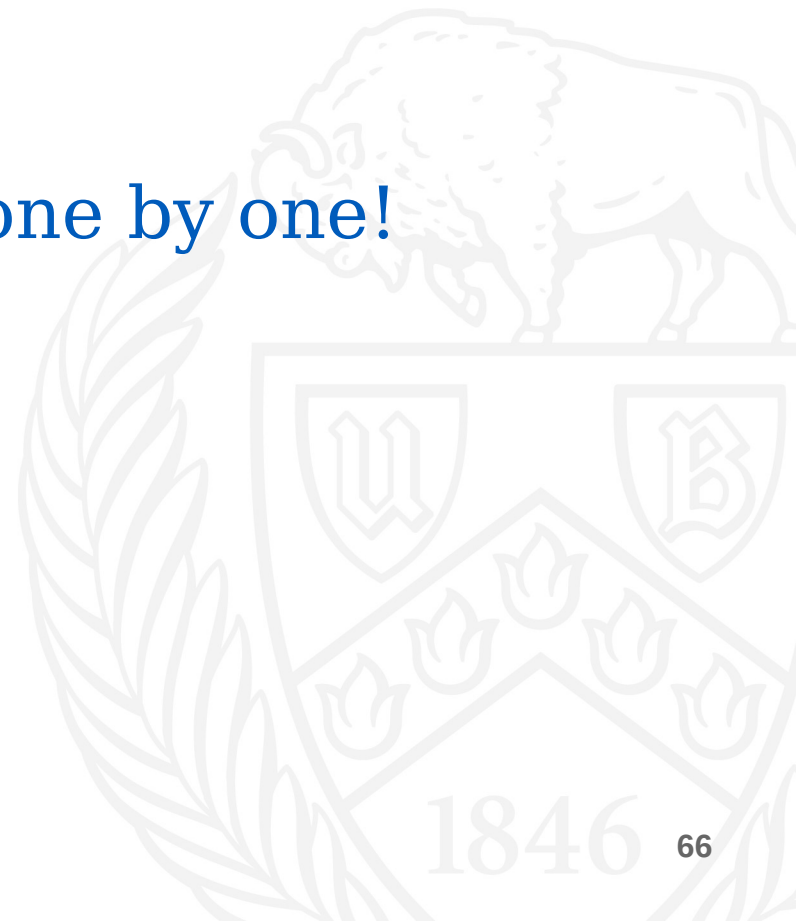
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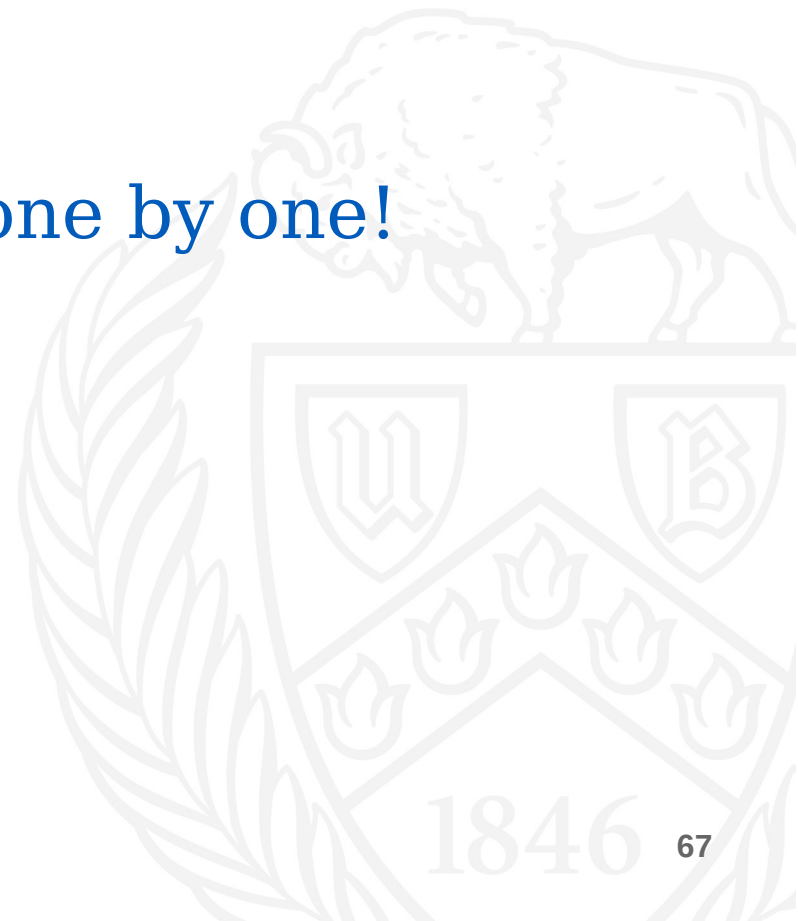
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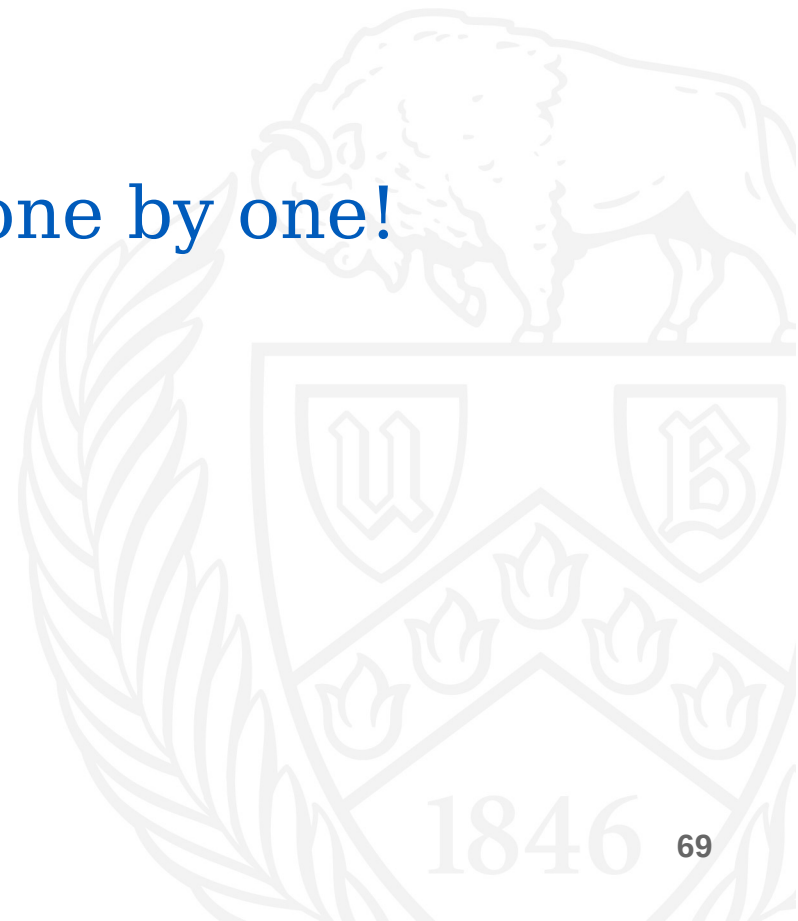
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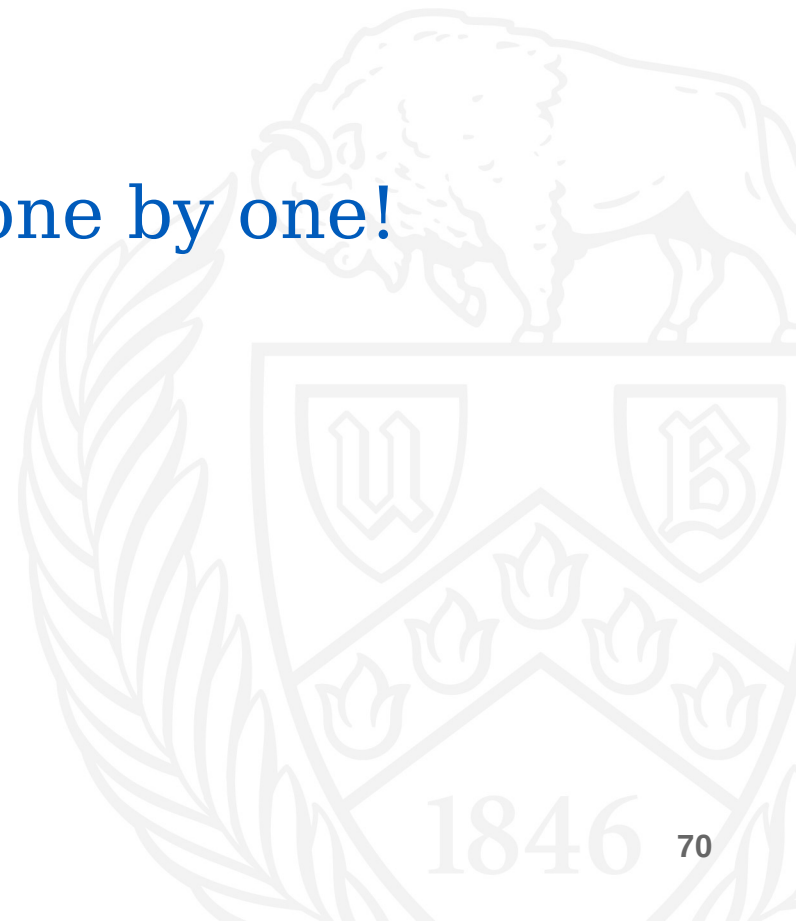
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- Multiple windows (in a session)
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- Recoverable sessions



# Terminal Multiplier: Tmux



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## Session Operations

- Start new session: `$ tmux`
- Detach session: `C-b d`
- Start new session with name: `$ tmux new -s NAME`
- Attach recent session: `$ tmux a`
- Attach specific session: `$ tmux a -t NAME`
- List sessions: `$ tmux ls`
- Kill specific session: `$ tmux kill-ses -t NAME`
- Kill all sessions but the current: `$ tmux kill-ses -a`
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## In Session: Command Prefix

- Prefix before all command: `C-b`



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## Pane Operations (With Command Prefix)

- Vertical split: %
- Horizontal split: "
- Kill pane: x
- Jump between panes: arrow keys
- Move pane left: {
- Move pane right: }
- Zoom in/out current pane: z
- Auto change layouts: space
- Resize pane: hold prefix key + arrow keys

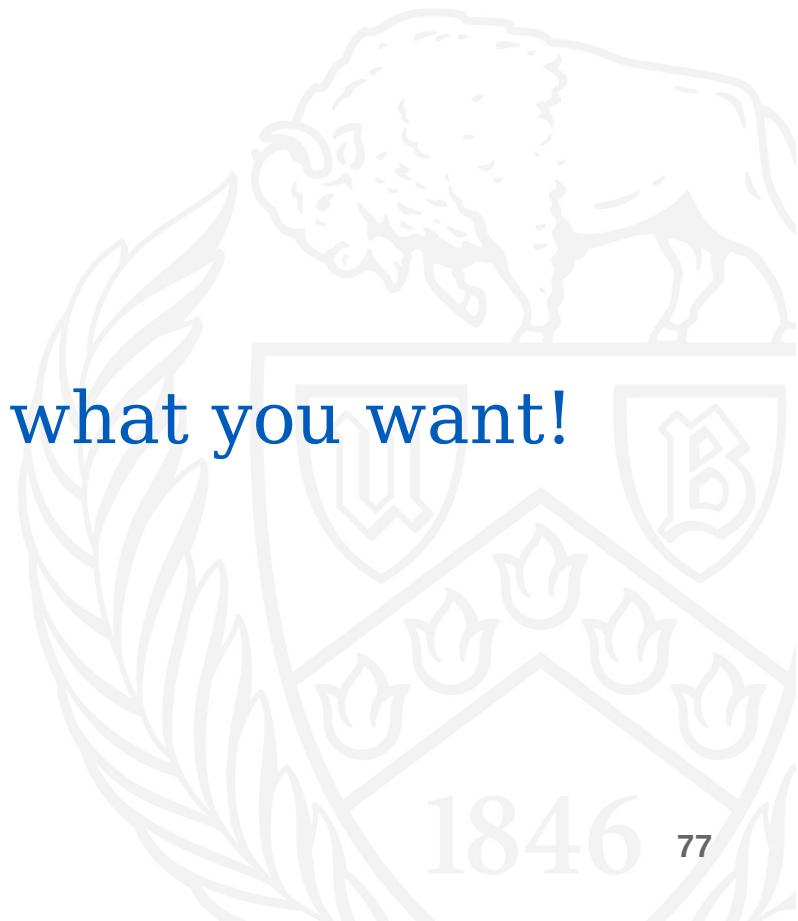


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### Auto-start Session with Layouts and Apps

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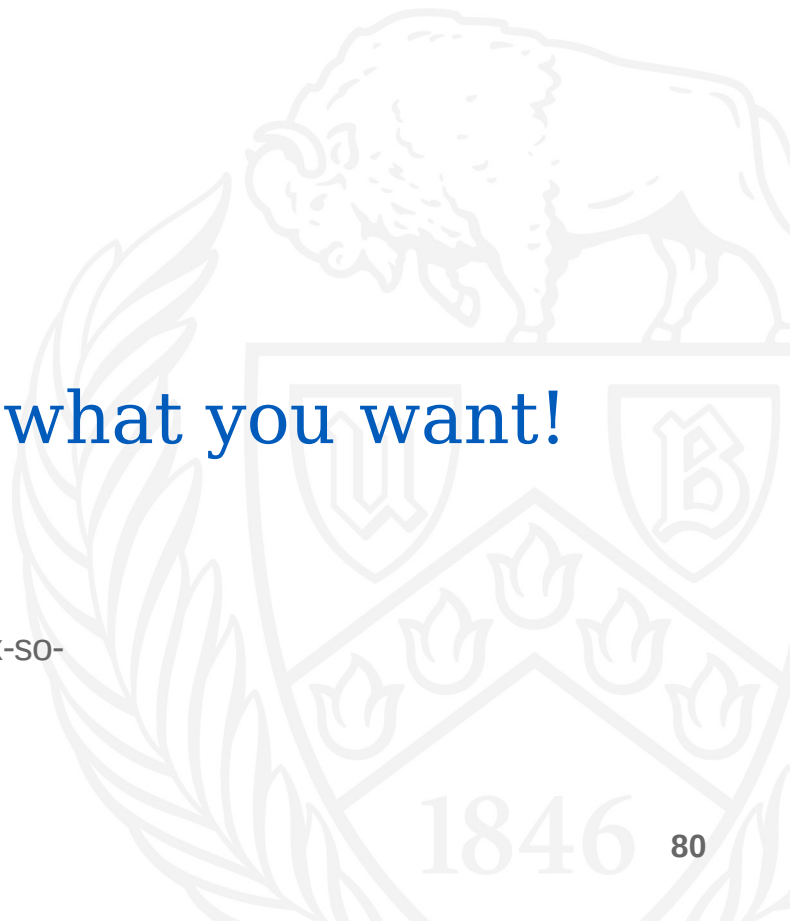
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## Cheat sheet for tmux:



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- Next window: n
- Previous window: p
- Kill window: &
- Go to window by number: 0 ... 9

## Clipboard (Copy & Paste between panes)

### Cheat sheet for tmux:

- <https://gist.github.com/MohamedAlaa/2961058>
- <http://tmuxcheatsheet.com/>



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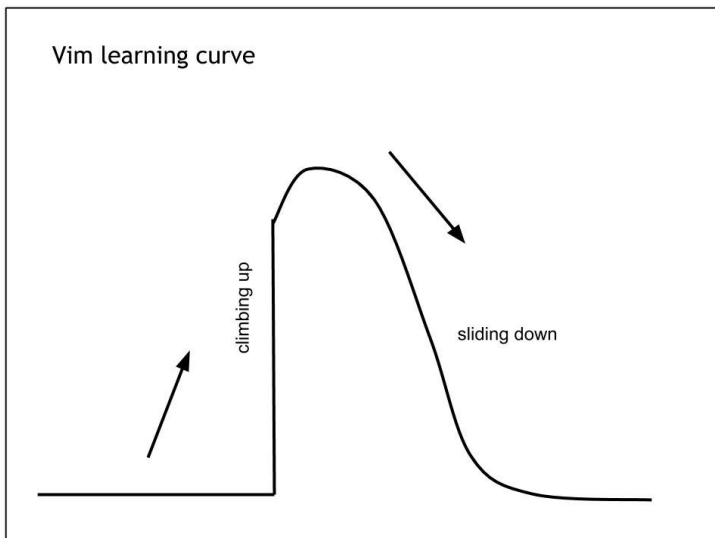


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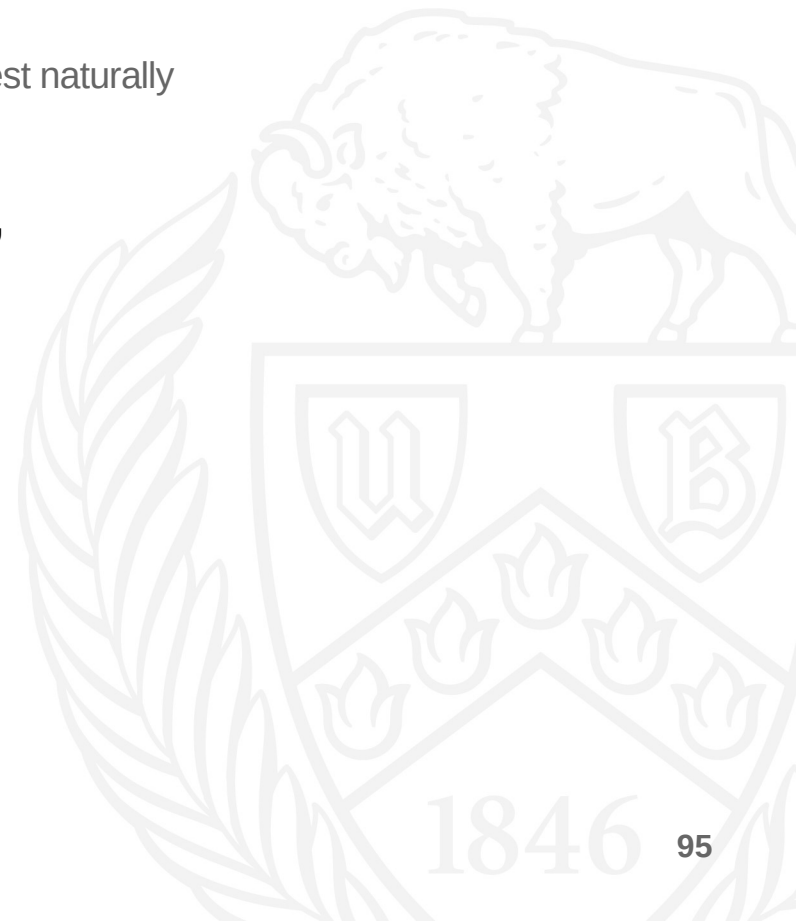
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Courtesy: <https://pascalprecht.github.io/2014/03/18/why-i-use-vim/>



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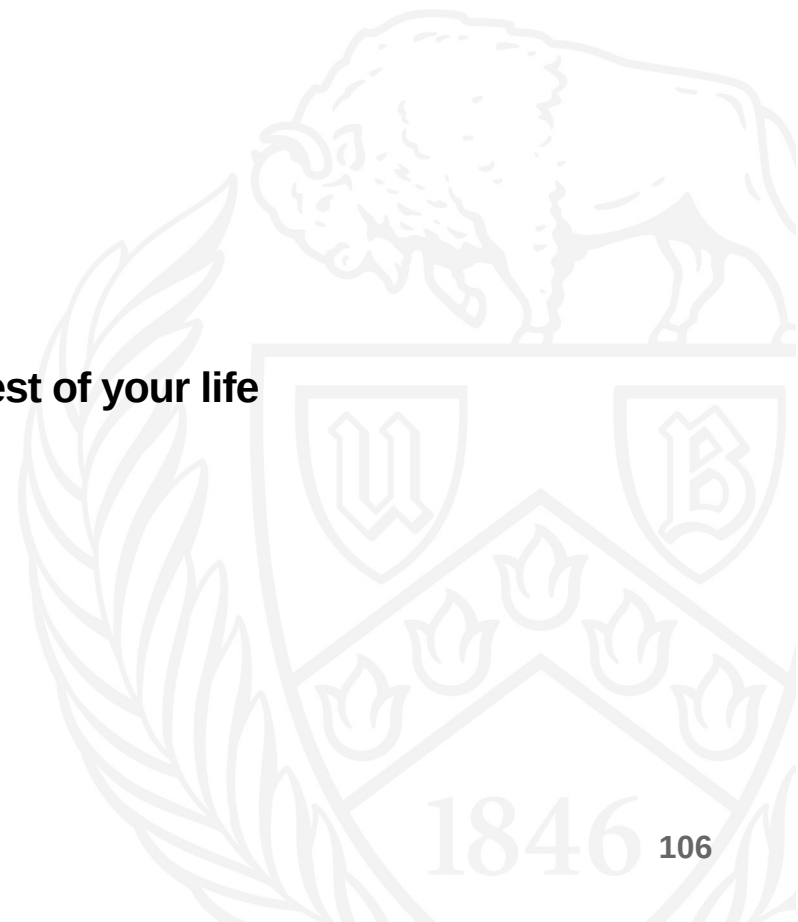


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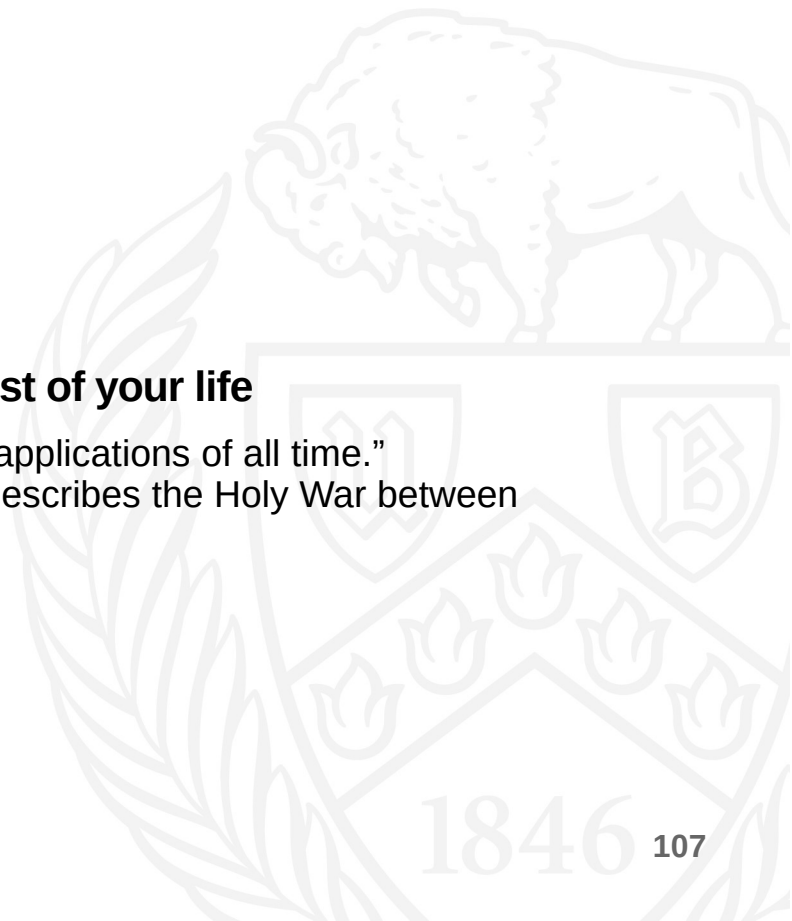
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Both editors require learning their respective commands, which means you won't be able to open them and get right to work. But expert users of either seem to make their editor of choice perform magic, often without even leaving their keyboard's home row.

<https://medium.com/linode-cube/emacs-nano-or-vim-choose-your-terminal-based-text-editor-wisely-8f3826c92a68>

# What Makes Vim Special: Three Concepts



# What Makes Vim Special: Three Concepts

**Concept 1: Mode, do different things in different modes**



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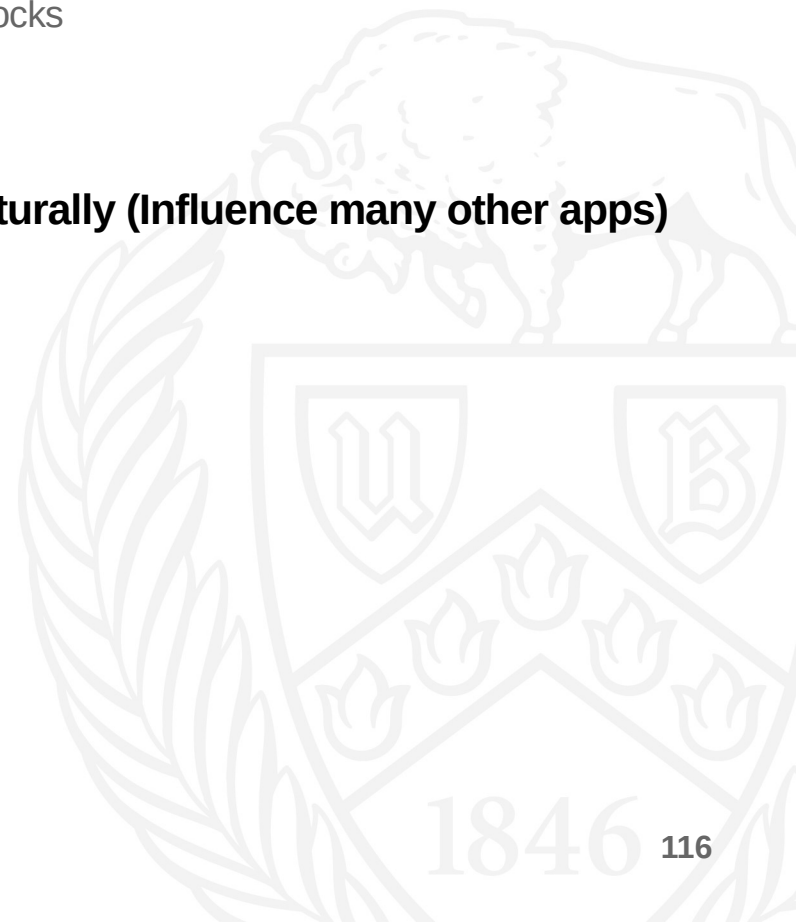


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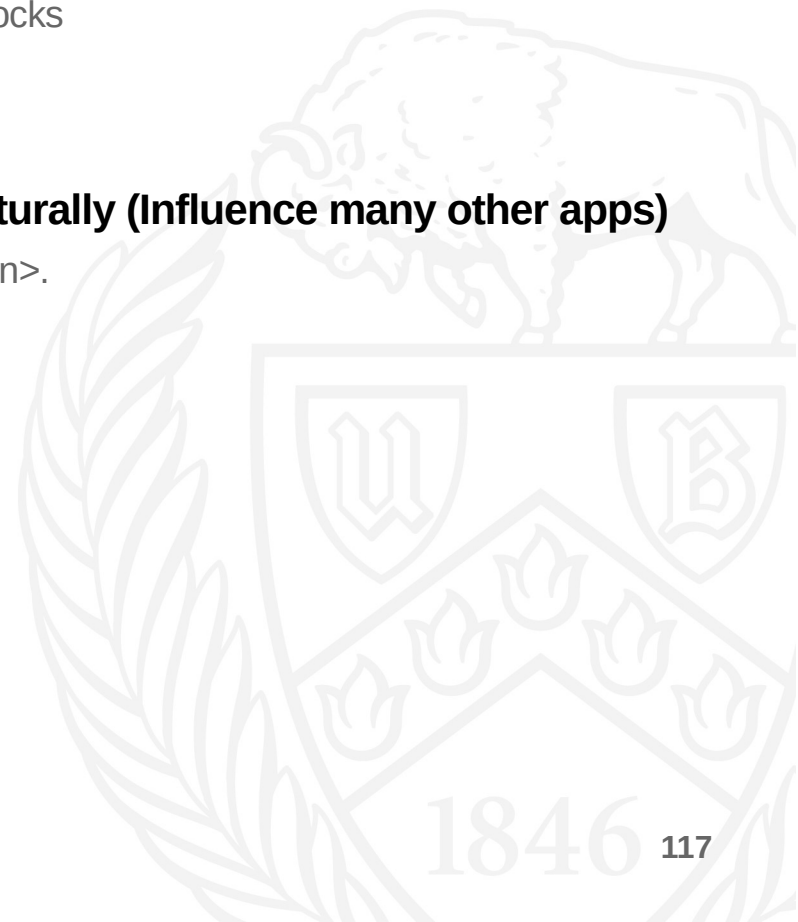
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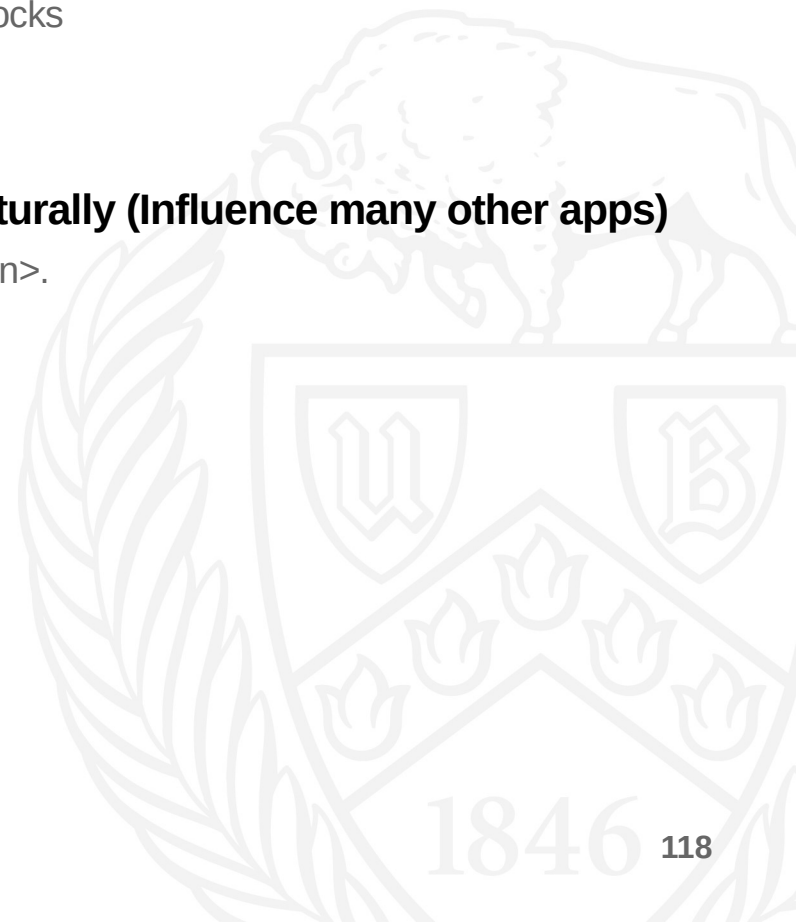
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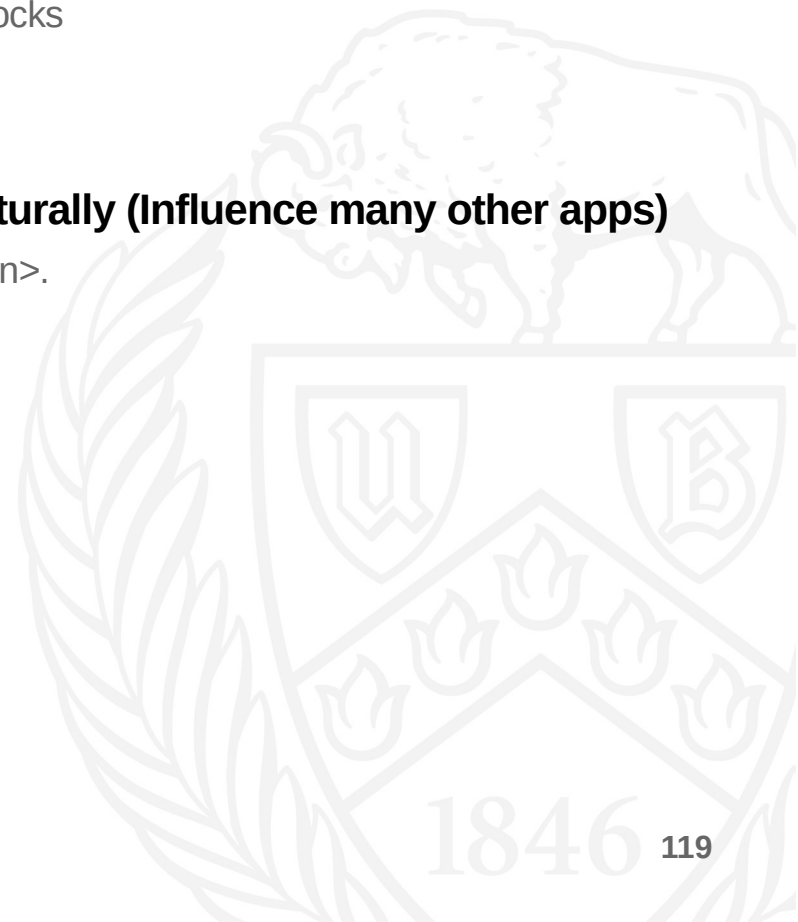
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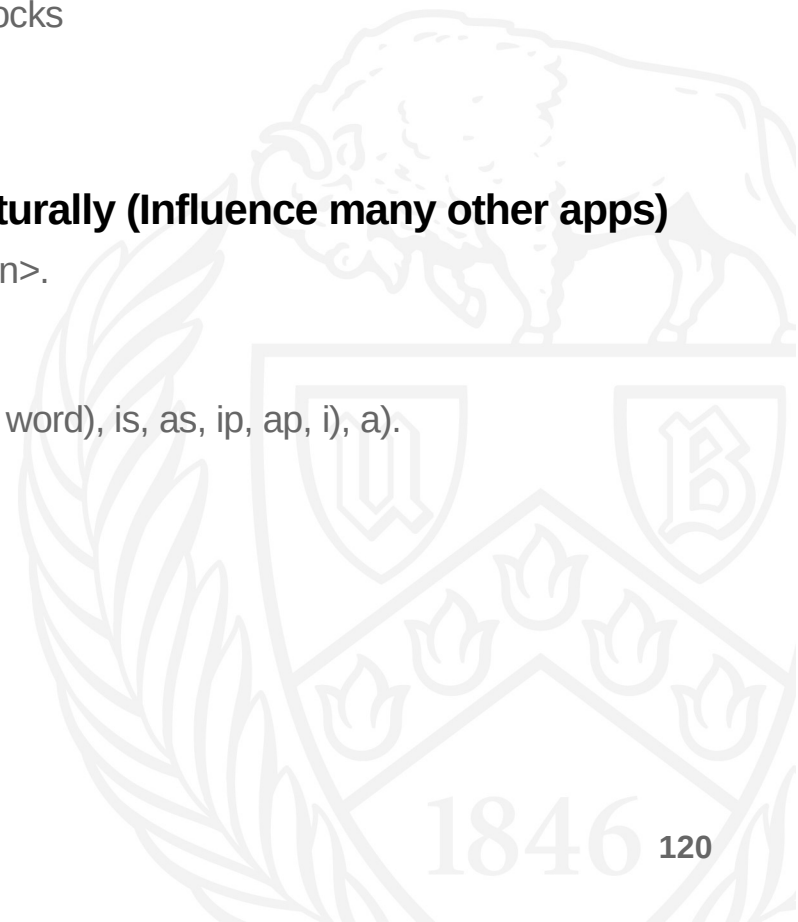
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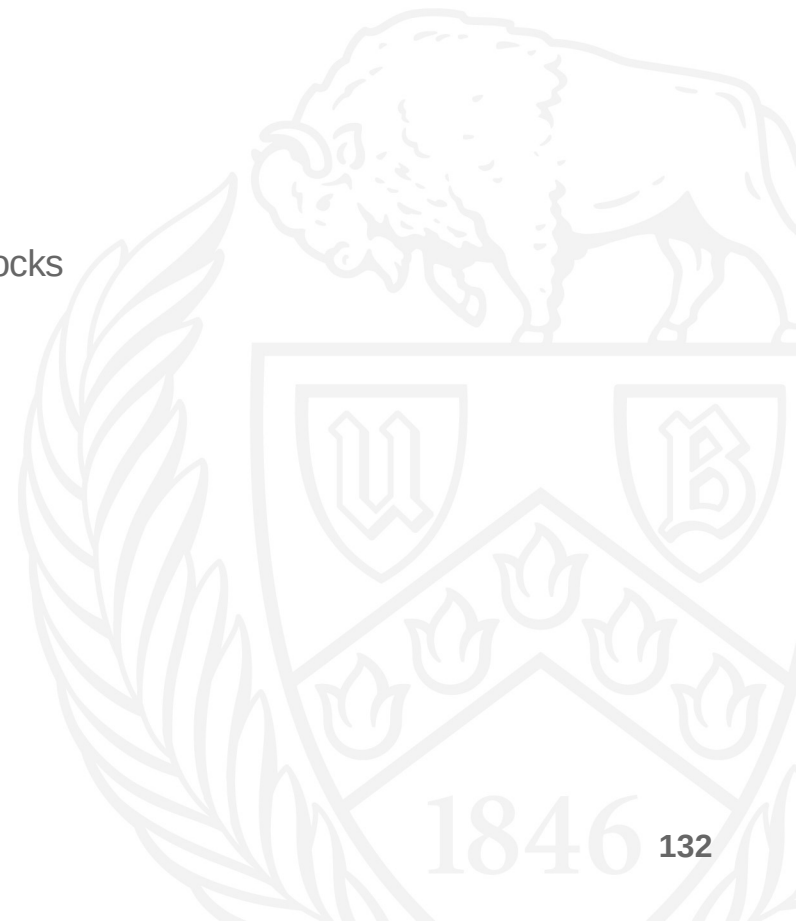
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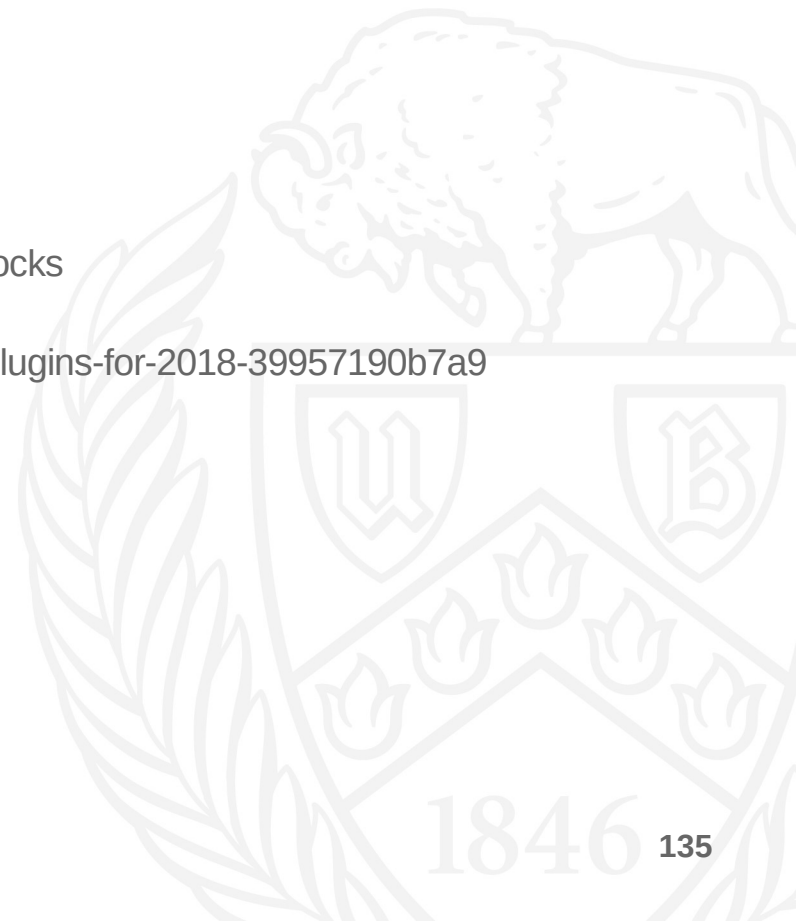
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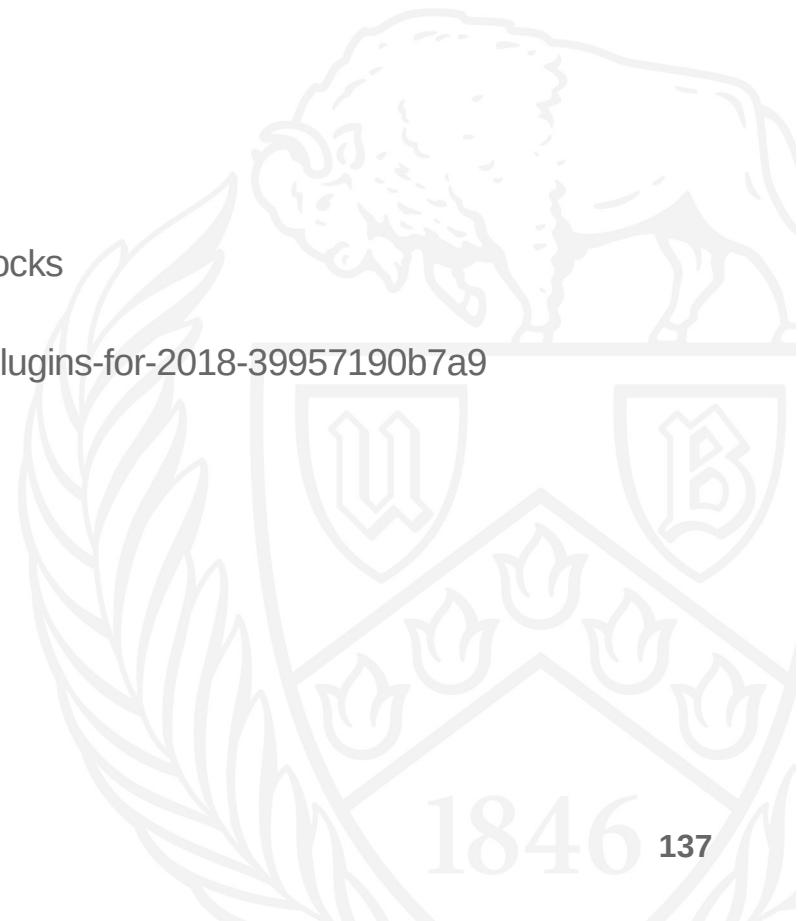


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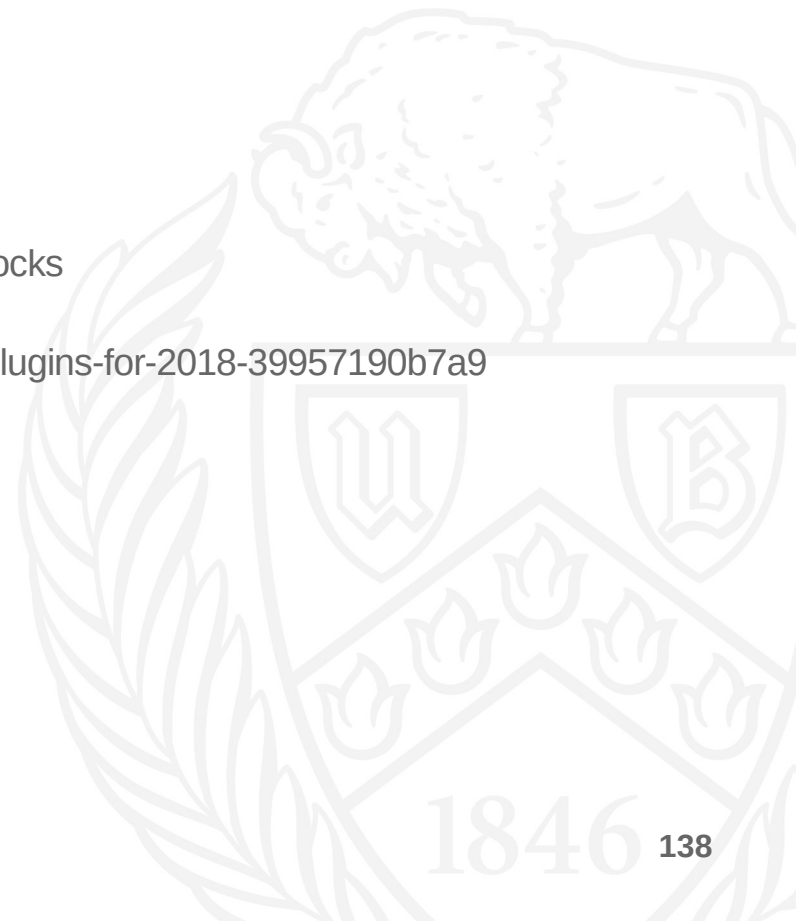
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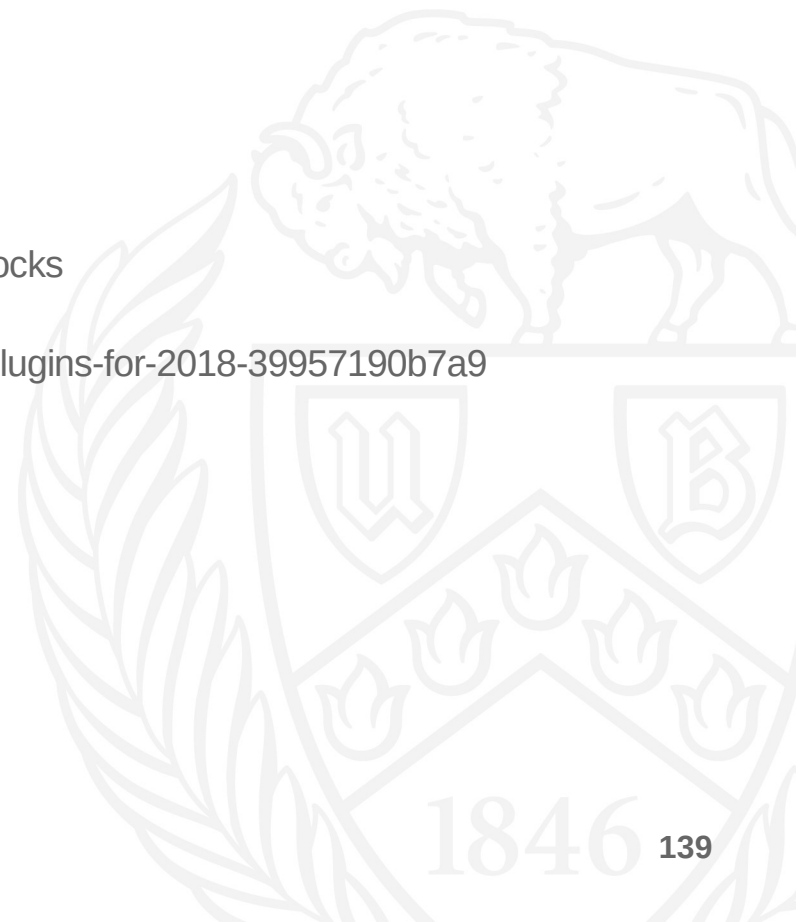
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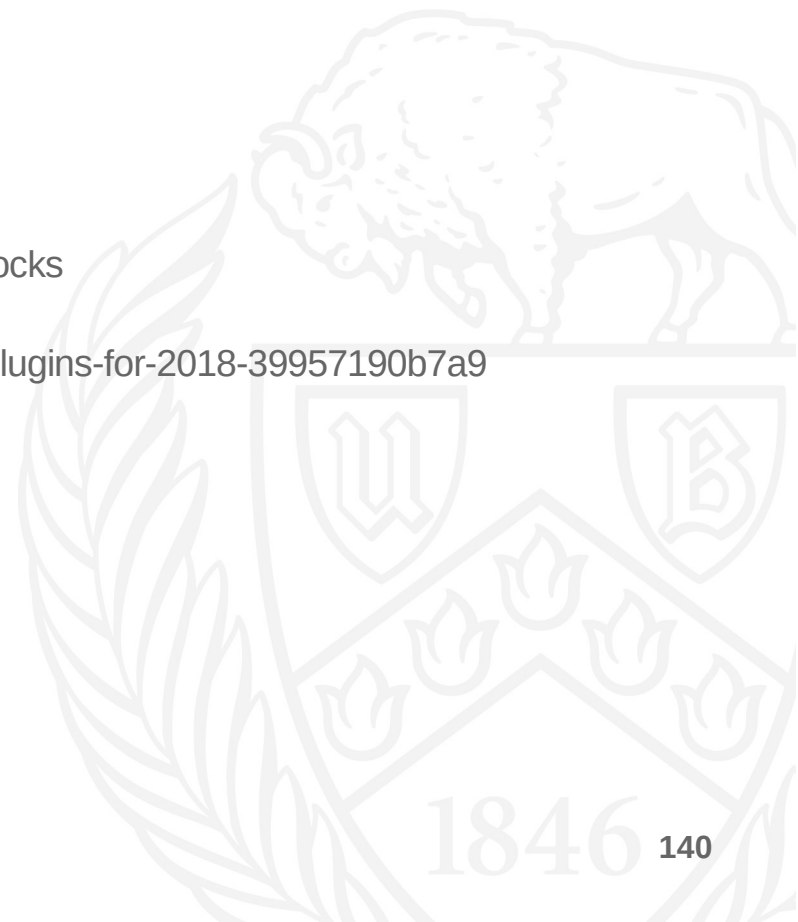
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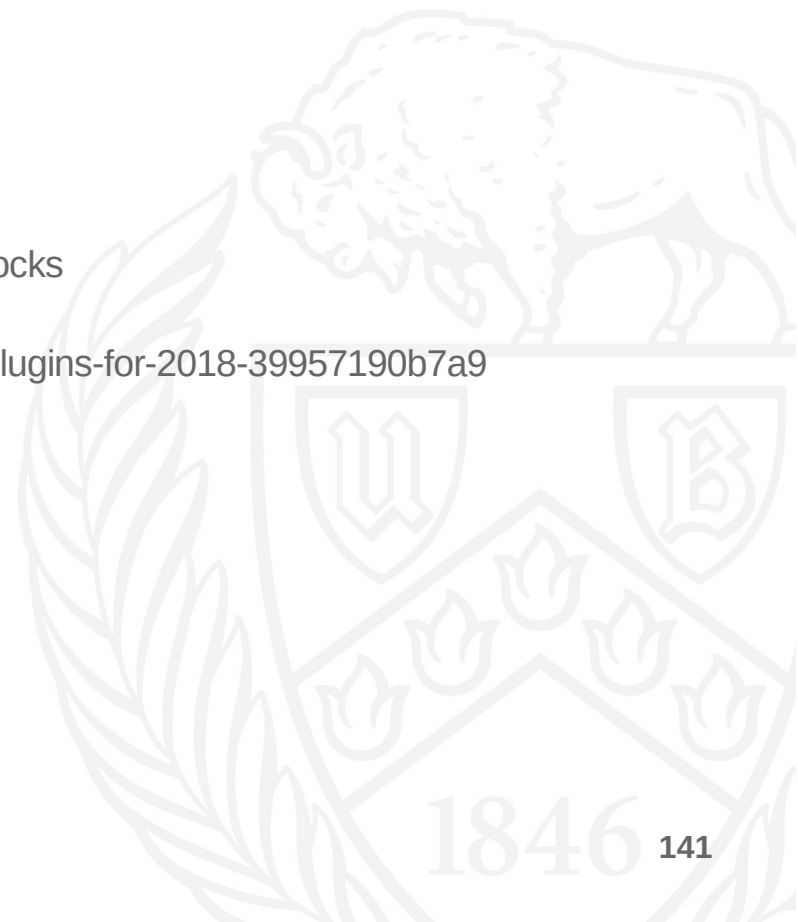
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**And, try the vim tutor app, `$ vimtutor`**



# How to Debug?

## Debug Tools

- gdb: c++ debug app, <https://darkdust.net/files/GDB%20Cheat%20Sheet.pdf>
- jdb: java debug app, <https://docs.oracle.com/javase/7/docs/technotes/tools/solaris/jdb.html>
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The end



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Explore more!



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Try more!

Experiment more!

And make more mistakes...

Most importantly

HAVE FUN!



THANK YOU!



THANK YOU!

There may be a followup email for a short survey for this course.

