

Unix/Vim Help Session



Come visit us at 311 Soda!
Events coming up: GM#1 on 2/13
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First up: ssh

- Stands for secure shell
- *nix (linux, unix) systems have ssh built in.
 - Windows users could use putty alternatively.
- To use ssh: “ssh user@url”
 - Ex. ssh cs61-asx@cory.eecs.berkeley.edu

SCP

- Stands for secure copy.
- Windows uses winSCP
- To copy a file to another computer, write
- `scp your_username@remotehost.edu:foobar.txt /some/local/directory` for copying a file to local.
- `scp foobar.txt your_username@remotehost.edu: /some/remote/directory` for copying a file from local to remote.

Traversing the File System

- ls – list files
- mkdir <dir> – make a directory
- cd <dir> - change to directory
- rmdir <dir> – remove a directory
- rm <file> – remove a file
- touch <file> - create a file
- pwd – print current directory

Exercise 1

- Make a directory called foo/
- Make a directory inside foo/ called bar/
- Make a file called baz.txt inside bar/
- Delete foo/, bar/, and baz.txt in one command.

File Contents (and more)

- `echo "words"` – print “words” to stdout
- `cat <file>` - print contents of file
- `mv <src> <dst>` – move a file
- `cp <src> <dst>` - copy a file
- `less <file>` – examine file
- `>`, `>>` - write to file, append to file

Searching

- `man <command>` - manual pages
- `grep <string> <file>` - find a string in file
- `find <dir> -name <file>` - find file in directory

Misc.

- | - pipe, connect stdout to stdin
- find . | grep <filename>
- & - run in background
 - usually for running GUI programs
- curl/wget – download webpage
- * - wildcard

Exercise 2

- Copy `/exercises/maze` to your home directory.
- Each directory contains three directories: left, right, or forward, each of which have similar contents.
- Somewhere in this maze is a file called 'password'. Figure out what the password is.

Exercise 3

- Copy /exercises/waldo-puzzle to your home directory
- Each file in waldo-puzzle contains a list of random words
- One of these contains the word 'waldo'
- Find waldo.

Unix Permissions

- `ls -l` – list files and their permissions
- `-rw-rw-r-- 1 collin collin 619 Sep 1 18:58 sched`
- The first characters designate permissions. Each group of three (skipping the first) is the read, write, and execute permissions for the owner, the group, and everyone else.
- `chmod ### <file>` - changes the permissions of a file to ###

Exercise 4

- In the exercises folder, there is a randomhaiku.sh file.
- change permission so you can run it.
- do this by `./randomhaiku.sh`

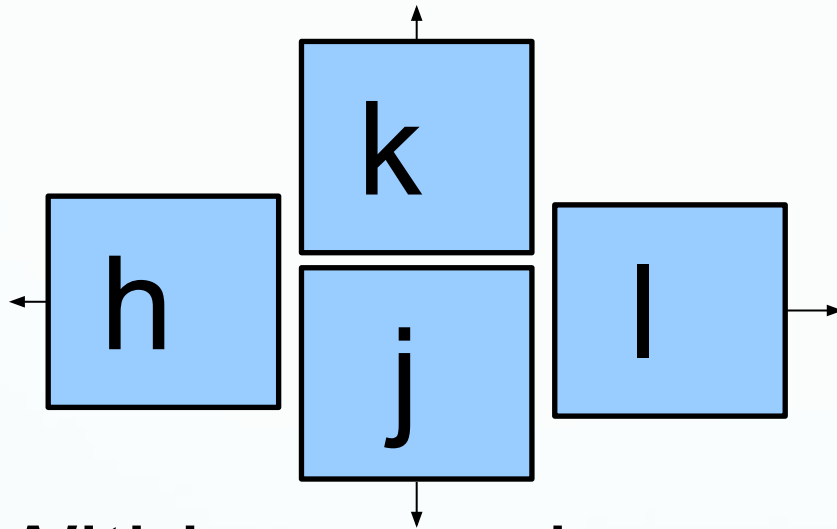
Break

Vi – Editor

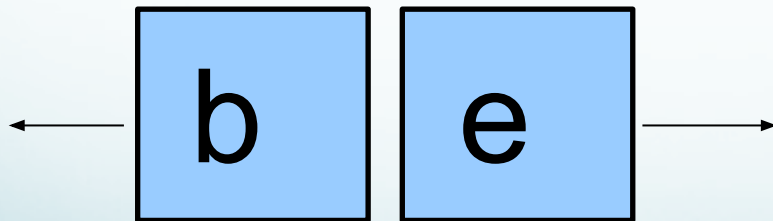
- Vi and Vim (Vi improved) are text editors
- `vim <filename>` - start vim and edit filename
- Vim is a modal editor, it has multiple modes:
- Key modes include Normal, Command, Visual, and Insert

Normal Mode

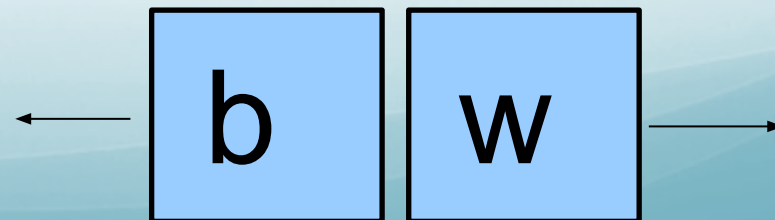
Moving:



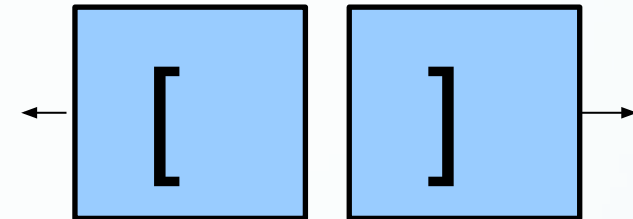
Within a word:



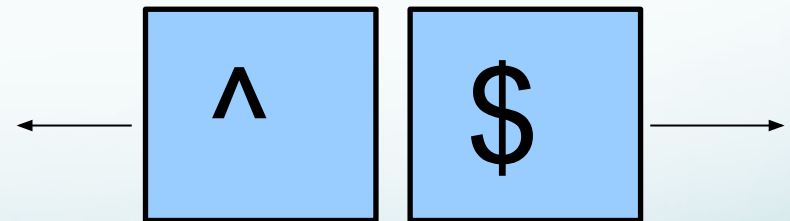
Between words:



Paragraphs

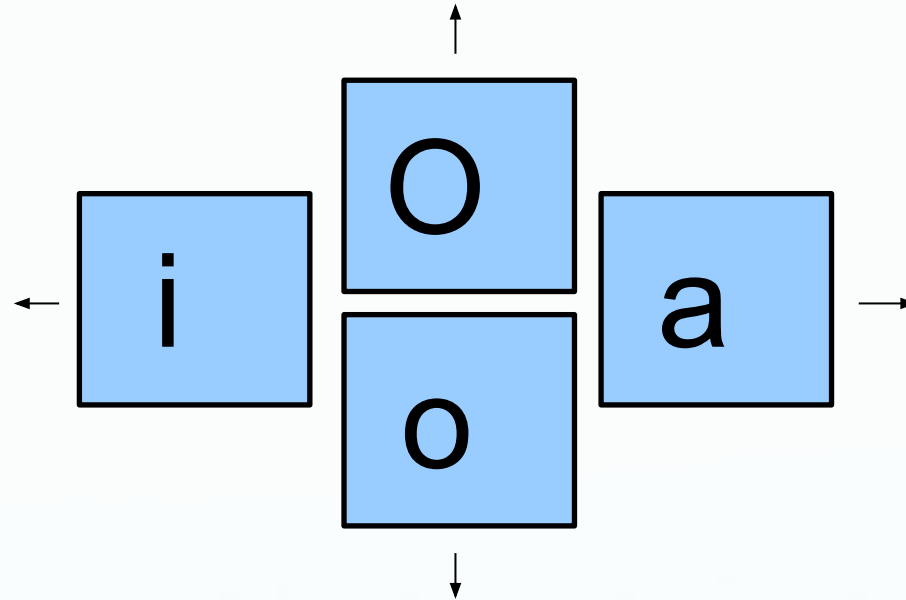


Within a line:

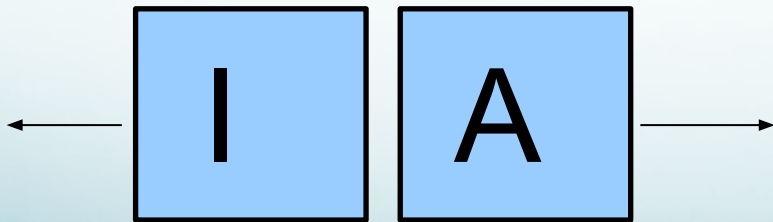


Command->Insert Mode

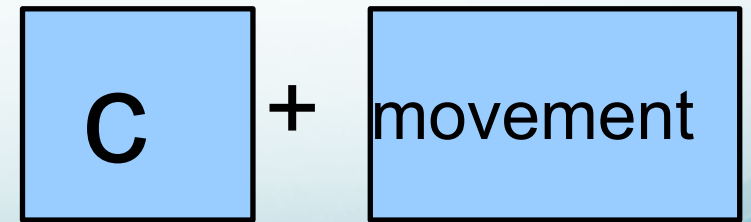
Typing:



End or beginning of lines:



Delete and Edit:



Command Mode

- From normal mode, press “:”
- Useful commands:
 - “:w filename” to save
 - “:q” to quit (“:q!” to to discard changes and quit)
 - “:tabnew” to make a new tab (gt and gT from normal mode to move between tabs)
 - “:qall” same as “:q” but quits all tabs
 - “:<linenumber>” jumps to the line number.

Normal Mode

- u undoes the previous command done.
- CTRL+r is the redo command.
- G moves to the end of the file.
- gg moves the beginning of the file.
- dd will delete a line of text
- x will delete the character your cursor is on

Searching/Replacing

- `/foo` – finds next instance of “foo”
- `n` – finds next instance
- `N` – finds previous instance
- Search and Replace is done in command mode
- `:%s/foo/bar/g` replaces all instances of “foo” with “bar”

Visual Mode

- Used to select code for copying/deletion
- Press 'v' from normal mode to begin selection.
- Move the cursor with normal mode controls (hjkl)
- 'c' and 'd' change and delete code.
- 'y' copies the selection. (""+y" to copy to your system copy buffer)
- 'p' in normal mode pastes it. (""+p" to paste from your system copy buffer)

Configuring Vim

- Standard vim sucks.
- Use plugins!
- <http://github.com/arctangent1759/vim-starter-kit>

Questions?

Thanks for coming! Hope you learned something about unix!

Advanced: Job Management

- `jobs` – list current jobs
- `fg` – bring job to foreground
- `bg` – run job in background
- `ctrl+z` – put job in background