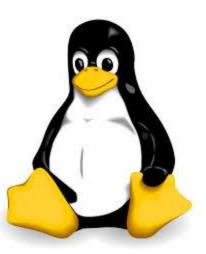
Introduction to Scientific Computing Meeting 3 Unix Commands









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Last meeting

- Learned some basic Unix commands
 - Seeing where you are and who you are; pwd, whoami
 - Moving around file system; cd, . , ..
 - Viewing listing of files and corresponding file information; Is, Is -F, Is -a
 - Opening files and web browsers;
 start some_text_file.txt
 start notepad++ some_text_file.txt
 start some_image_file.png
 start chrome www.google.com

FYI

- For now, sharing slides and recordings through my Google Drive.
 - Recordings are large (~100MB) so I will share via
 WebEx, and will archive a recording locally.

Today's Objective

1. Learn some more Unix commands

- Creating directories and files; mkdir, touch
- Looking at file contents; cat, head, tail, less
- Moving and copying files and directories; mv, cp, cp -r
- Deleting files and directories; rm, rmdir, rm -r
- Finding text in files; grep
- Count number of lines, words, and characters in files; wc

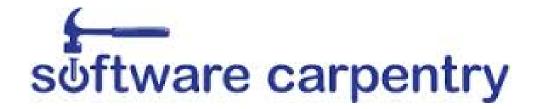
Why?

- Good basis for learning how to program.
- Becoming more comfortable on command line
- Becoming more efficient

Quick Demo of Some Commands

```
$ mkdir temp
$ cd temp
S touch somefile.txt
$ start notepad++ somefile.txt
$ cat somefile.txt
$ mv somefile.txt junk.txt
$ cp junk.txt junk2.txt
$ rm junk2.txt
$ cd ../
$ rm -r temp
$ start iexplore http://waterdata.usgs.gov/ky/nwis
$ Is Downloads/
$ mkdir nwis-data
$ cp Downloads/uv.txt nwis-data
$ cd nwis-data
$ cat uv.txt
S head uv.txt
$ less uv.txt
                                            # page though with space-bar; quit with q
$ grep KENTUCKY uv.txt
                                            # find lines of text in file containing KENTUCKY
$ mv uv.txt usgs-03287500-uv.txt
$ wc usgs-03287500-uv.txt
$ wc -l usgs-03287500-uv.txt
```

Video – The Unix Shell



- Software Carpentry, Greg Wilson
 - The Unix Shell: Creating and Deleting
 - http://software-carpentry.org/v4/shell/makedel.html

Try Out Commands – page 1

```
$ mkdir temp
                                                      # make directory
$ cd temp
                                                      # change directory
S touch somefile
                                                      # make file
OR
$ start notepad++ somefile
                                                      # make file
# write some lines of text
S cat somefile
                                                      # concatenate file
$ start notepad++ somefile
                                                      # open file
# write enough text that extends ~ 15 lines
$ cat somefile
                                                      # make file
$ head somefile
                                                      # see first 10 lines in file
$ head -4 somefile
                                                      # see first 4 lines in file
$ tail somefile
                                                      # see last 10 lines in file
$ mv somefile my-play-file.txt
                                                      # rename file
$ mv my-play-file.txt ../
                                                      # move file to parent dir
$ cd ..
                                                      # change directory to parent
$ Is
                                                      # list files
$ mv my-play-file.txt temp
                                                      # move file to temp
$ cd temp
                                                      # change dir to temp
```

Try Out Commands – page 2

```
$ cp my-play-file.txt my-play-file2.txt
                                                         # copy file
$ cat my-play-file2.txt
                                                                    # concatenate
$ cat my-play-file.txt my-play-file2.txt
                                                         # concatenate
$ rm my-play-file2.txt
                                                         # remove file
$ cd ..
$ cp temp temp2
                                                         # copy directory
$ rmdir temp2
                                                         # remove directory
# temp2 is not empty
$ rm -r temp2
                                                         # remove recursively
$ cd temp
$ grep 5 my-play-file.txt
                                                         # find lines with text
# edit my-play-file.txt with some additional text and then grep for it
$ wc my-play-file.txt
                                                         # count file lines, words, characters
$ wc -I my-play-file.txt
                                                                    # count file lines
$ wc -w my-play-file.txt
                                                         # count file words
$ wc --chars my-play-file.txt
                                                         # count file characters
```

Next meeting

- More Unix commands
 - Pipes and filters

```
$ wc -I *.txt > lengths.txt
```

```
$ wc -| *.txt | sort lengths.txt | head -1
```