RECAPPING LAST CLASS

- Learned how to:
  - remote access other machines
  - avoid password with ssh keys
- Commands covered:
  - `ssh` -> remote accessing other machines
  - `ssh-keygen` -> generating public/private key pairs
  - `ssh-copy-id` -> moving public key to another machine
  - `ls` -> listing files in the current directory

RECAPPING LAST CLASS (CONT.)

- Other commands shown
  - `cat` -> showing file
  - `cd` -> change current directoryu
  - `echo` -> write arguments to standard output

TAKING A STEP BACK: BIGGER PICTURE

- Who cares?
  - Why is this important?
  - When will I need to use the shell?
- Answers:
  - Efficiency
  - Necessity
    - Only have shell access
    - Tools only available from command line

TAKING A STEP BACK: LINUX FILESYSTEM (CH04)

- Hierarchical filesystem
- root directory /
- other directories branch off from root (home, tmp, etc, ...)
- home directory for each user ~
- absolute paths from / or expanded by ~
- relative from current directory

NAVIGATING THE FILESYSTEM (CH03)

- `mkdir` - make a directory
- `cd` - change into a different directory
- `ls` - list files
- `rm` - remove
- `cp` - copy - careful
- `mv` - move/rename - careful
- `pwd` - print working directory

VIEWING FILES (CH03)

- `cat` - print out file
- `less` and `more`
- `head` - show beginning lines of file (default 10)
- `tail` - show last lines of file (default 10)
- `uniq` - displays file with duplicate lines removed
- `sort` - displays file with lines sorted

SCP (CH17)

- ssh allowed us to securely access a shell on remote devices
- what about moving files? -> scp
- Command format:
  `scp [[user@]src_host:]srcpath [[user@]dest_host:]destpath`
- Example: transfer file to remote machine
  `scp pathtofile username@hostname:~/some/remote/directory/`
- Moving the other way? -> swap order

HOW IN THE WORLD AM I SUPPOSED TO REMEBER ALL OF THIS?

- Practice
- Access manpages using `man` for details on each call
  - Example `man man`
  - Example `man ls`
  - Pay attention to manpage section (example: `printf`)
- `apropos` for searching manpages
  - Example `apropos "remove file"`
  - Example `apropos "remote"`

Mini-lab (We'll get to this in lec03)

1. Use `ssh` to access one of the eos machines
2. Make a directory for this mini-lab (you can call it whatever you want)
3. Use `cd` to change into that directory

Mini-lab(cont.)

4. Run `wget https://raw.githubusercontent.com/fivethirtyeight/data/master/avengers/avengers.csv` and `wget https://raw.githubusercontent.com/fivethirtyeight/data/master/college-majors/recent-grads.csv`

Mini-lab (cont.)

5. Use `ls` to verify that you have 2 data files in this directory
6. Use `exit` to disconnect (now you'll be back on your local machine)
7. Use `scp` to transfer the directory from eos to your local machine Hint: we used `scp` in lecture to transfer a file, where might you look to see how you can transfer a directory?
8. Rename the files or directory
9. Use `scp` to transfer the renamed files back to eos