

Wednesday, Feb 8, 2023

Lecture # 10

MSSX 6000

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## Announcements

- \* HW 2 assigned today. Due Mon, Feb 20, 11:59pm
- \* Off today, 2:30pm - 3:30pm, on Teams

## Lecture 4 - Using the Unix Command Line.

Unix was an operating system framework developed in the 70s. Precursor to all modern O.S. (except Windows)

Mac and Linux have "terminals" where you can use Unix commands, and "Git for Windows" lets you use Unix on Windows.

Today: basic unix commands to navigate

and manipulate files/folders and run (2)  
python scripts

Why this is useful:

- \* On your own computer sometimes unix commands are more efficient than using a GUI.

(e.g., view the first 10 lines of a 10gb text file)

- \* Any work you do through a server, you probably won't have a GUI for, and you have to use the terminal.

(Software Carpentry website has great resources)

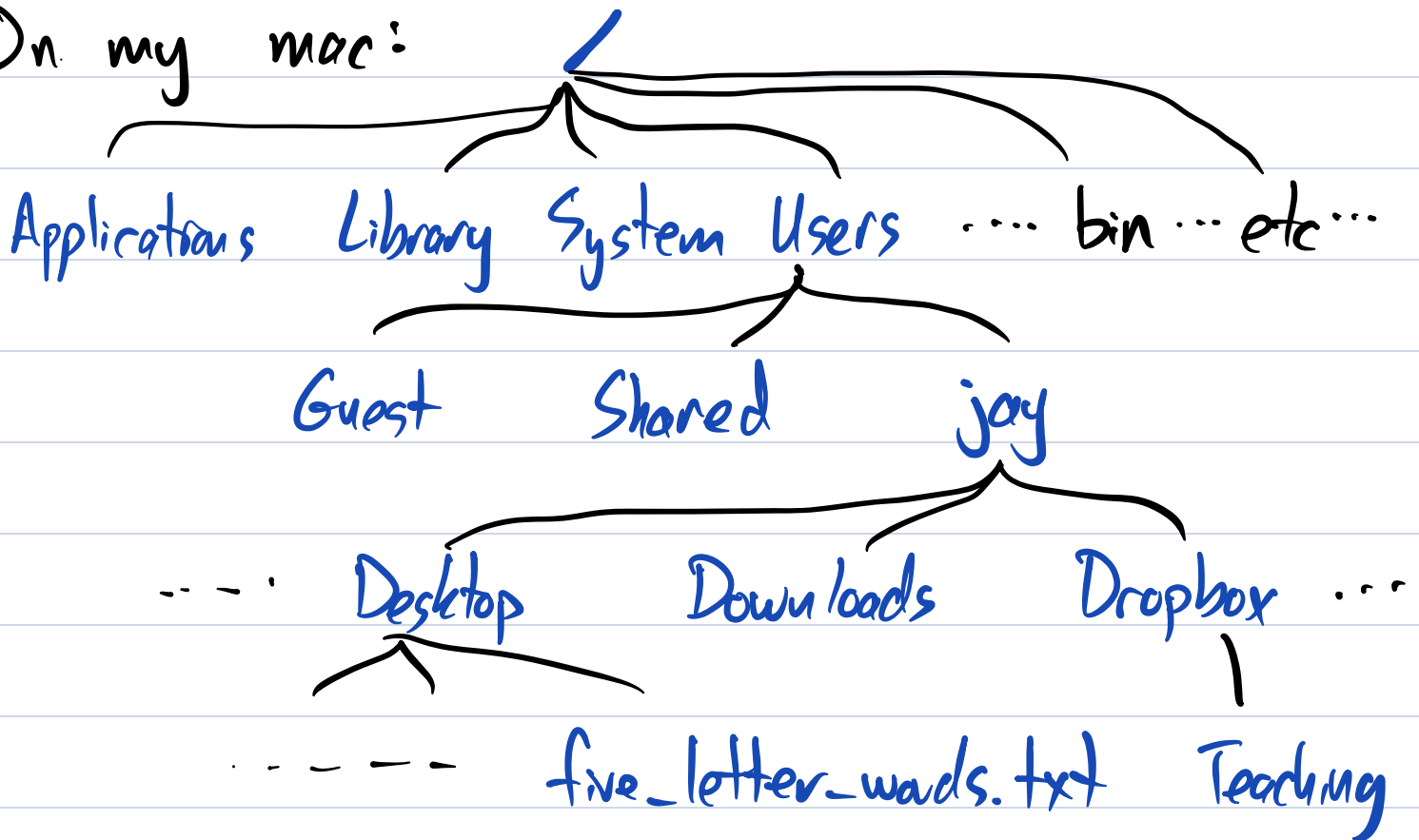
File System:

Files in a computer are stored in a hierarchy. The very top is called "/" in Unix systems (Mac/Linux) and "C:\\"

in Windows.

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On my mac:



Every file has a full name:

/Users/jay/Desktop/five\_letter\_words.txt

Demo: in your Terminal or in Git for Windows

(1) pwd - "present <sup>print</sup> working directory"  
where in the filesystem the terminal is

(2) ls - "list", displays the files in the

current folder

(4)

Most commands have optional arguments  
"flags" that change the behavior

`ls -l` - lists the files with extra  
information

To see the full "manual page" for a  
command you run the command  
"man [command]"      `man ls`  
(Press "q" to exit)

You can tell "ls" and many other  
commands to act only on some files.  
Use the "\*" symbol to be a  
wildcard, could be anything.

`ls -l *.txt`

Prints the info only about files whose  
name ends in ".txt"

(3) `cd` - "change directory" (5)  
changes which folder the terminal  
is in

`cd [directory]`

If the directory starts with "/", you  
are giving an absolute path, full  
address in the hierarchy.

If you don't start it with "/", you  
are giving a relative path, which is  
where the folder is relative to your  
current location.

> `pwd`

`/etc/security`

> `cd /Users/jay`

> `pwd`

`/Users/jay`

> `cd Dropbox/Teaching`

absolute path

Shortcuts: ". " - the current folder (6)  
".." - up one level  
"~" - user's home folder  
(/Users/joy)

Tab completion: You can use "tab" to complete a command or filename if it's unique, or press it twice to see the possibilities.

(4) mkdir [name] - "make a directory" (folder)

(5) mv [current location] [new location]

- moves or renames a file

(6) cp [current location] [new location]

copies a file or folder

use -R  
flag

(7) rm [file or folder]

- "remove" or delete a file or

folder -r flag

⚠ This is dangerous! The files don't go into any recycle bin or trash can. ⚠ (7)

"rm -rf /" don't do this

(8) cat [filename] - prints a whole file to the terminal

(9) head [filename] - prints the first 10 lines of a file

(10) tail [filename] - prints the last 10 lines  
"-n" to change from 10 to something else  
head -n 20 [file]