601.220 Intermediate Programming

Linux basics

Outline

- Gaining familiarity with Unix/Linux

Unix/Linux

- powerful class of operating systems
- multiuser, unified file system
- command-line interface
  - text-based commands, no graphical user interface (GUI)
  - "long-term lazy": slower to learn, faster to use
  - allow for easy automation of series of commands

Linux vs. Windows vs. Mac

Unix/Linux

- the term *directory* means the same thing as folder
- Unix/Linux commands are case-sensitive
- ~ denotes the home directory of your account
- . denotes the current directory
- .. denotes the parent directory (one level up from current)
- when you log into ugrad, you'll be in your own home directory

Two items to work on right now

- Obtain ugrad account form (if don't have a CS ugrad account)
  - Fill out front of form, including JCard number
  - Make a note of your username (we'll be changing the password)
  - Sign the back of the form to indicate you've read the user policies
  - Make sure you hand form back in when requested
- Unix/Linux command line boot camp (tutorial)
  - Begin working on this now, and be sure to complete it prior to next class
  - https://cli-boot.camp/

Connecting to ugrad from your own computer

- Windows: download PuTTy and repeat what we did today
  (www.chiark.greenend.org.uk/~sgtatham/putty/download.html)

- Mac: open Terminal application, then type the command
  ssh <your-username>@ugradx.cs.jhu.edu

- Linux: same as Mac, open a terminal and
  ssh <your-username>@ugradx.cs.jhu.edu

Unix/Linux: basic commands

- **pwd** - print working directory
  - `pwd`
- **ls** - list directory contents
  - `ls`
  - `ls -l`
  - `ls -la`
- **cd** - change directory [specify directory name]
  - `cd <folder_name>`
  - `cd ..`
  - `cd ~`
- **mkdir** - make new directory within current directory [specify name]
  - `mkdir <folder_to_create>`
- **less** - view text file screenful at a time [specify file name]
  - `less <file_to_view>`

Unix/Linux: basic commands, continued

- mv - change location of file or folder [specify source, then destination]
  - `mv <source> <destination>`
  - `mv hellooo.c hello.c`
- cp - make a copy of file or folder [specify source, then destination]
  - `cp <source> <destination>`
- rm - remove a file [specify file to remove]
  - `rm <file_to_remove>`
- locations can be *relative* to current directory
  - `cp hello.c folderForToday/hello.c`
- locations can be *absolute*, based on full path in file system, so you don't have to change to a directory to move or copy files in from/to that location
  - `cp ~/oldFolder/hello.c ~/folderForToday/hello.c`

Insta-quiz!

What commands would create a directory called media in your home directory, and then create a directory called video within media? (Note that ; separates commands.)

A. `cd ~; mkdir media; mkdir video`

B. `cd; mkdir -p media/video`

C. `cd ~; mkdir media; cd media; mkdir video`

D. More than one of A–C is correct

E. None of the above answers are correct