601.220 Intermediate Programming

Day 1 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

- Get linux account (if you don't have a CS ugrad account yet)
  - If a CS major/minor
    - get a personal account
    - see https://support.cs.jhu.edu/wiki/Category:Accounts for instructions
  - If not declared CS student
    - send private post on Piazza to your instructor to request a class account
    - include your Hopkins ID and your course section number when making the request
- Unix/Linux command line tutorial
  - Begin working on this now, and be sure to complete it prior to next class
  - The link is on the **Resources** page on the course website
  - See welcome email for link to course website

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