CS31 Discussion 1E

Fall 20 - Week 1

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Contact Info

Taasin

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- Office Hours
  - Monday & Wednesday 4:30pm - 5:30pm
  - Friday 2:30pm - 3:30pm

Abigail

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- Office Hours
  - TBD

- **All** office hours
  - http://web.cs.ucla.edu/classes/fall20/cs31/ -> Office Hours

Syllabus

- Textbook (required)
  - https://learn.zybooks.com (code: UCLACS31SmallbergFall2020)
- Exams
  - Midterm 1 - Oct. 29 (Tuesday)
  - Midterm 2 - November 24 (Tuesday)
  - Final - December 12 (Saturday, **end of week 10**)
- Late penalty
  - 12.5% per hour (0.0034722% per second)
  - Start early!!!

Agenda

- Intros
- Demos
  - Copying files to the linux servers
  - Using Xcode
- Discuss Project 1 (due Monday night!)

Intros!

Demos!

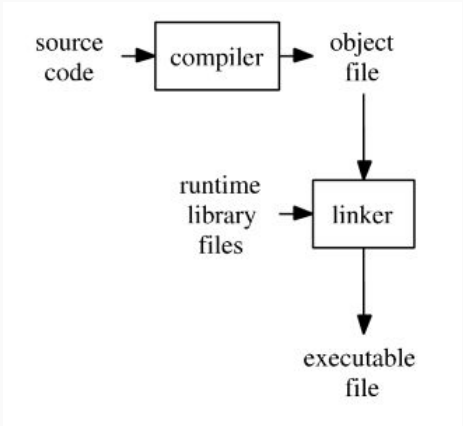
Project 1

- Due **this Monday (Oct 12)**
  - Start today!
- Mostly about getting used to the tools you'll be using this quarter
  - Compile time vs runtime error
- Checklist of things to know
  - ssh into the linux servers (use VPN)
  - Use your IDE to write and compile code
  - Copy your files to the server
  - Compile and run your code on the server
  - Create a zip file

Breakout Rooms

Compilation

- For compiled languages
  - You start with human-readable code, e.g. `std::cout << "Hello" << std::endl;`
  - Compilation is one of the steps to turn code into binary, which computers can read - `0101100001`
- A “compilation error” is when you make a mistake writing your code
  - E.g. missing a semi-colon
  - And the compiler can’t understand something, so it can’t compile the code into binary
  - The compiler will tell you what the error was



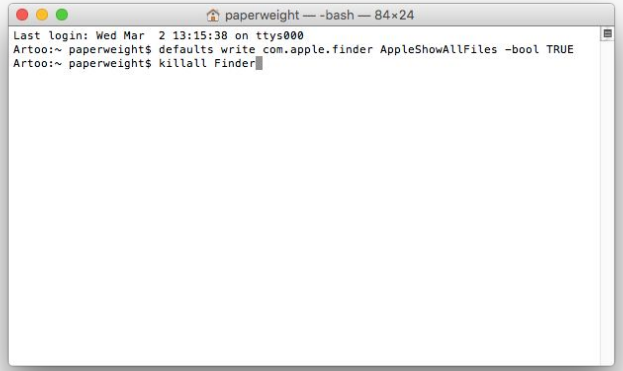
Run Time

- This is when you are “running” the executable
- Your program successfully starts, but you don’t get the output that you expect
  - There is a fault in your logic, and you need to go back and re-evaluate your code
  - Maybe you added instead of subtracted
- These can be hard to catch
  - Test your code incrementally to find them early

Appendix

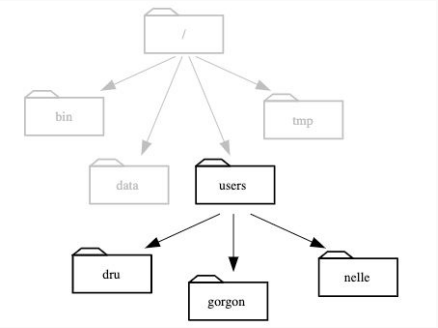
Terminal

- A tool that allows you to run commands on your machine (computer)
- Mac
  - Look for the application called “terminal”
- Windows
  - PuTTY is one of them



Directories

- A different way to say “folder”
- Your computer organizes files into different directories
  - When using a terminal, you can’t see your folders
  - So you need to type different commands to replace clicking, dragging, and dropping
- The ‘root’ directory contains all of your files
  - Represented by a “~”



Useful Commands

(https://github.com/0nn0/terminal-mac-cheatsheet)

- Try out these commands on your terminal!
- `$ whoami`
  - Prints out your username
- `$ ls, $ ls -l, $ ls -a, $ ls -al` (aka “list”)
  - Lists the files in your current directory
  - Play around with the different “flags” and see how they’re different
  - Note: ‘.’ and ‘..’ are files in every directory
- `$ cd dir` (aka “change directory”)
  - You can navigate to directories connected to the current one
  - Note: `$ cd ..` will take you back one directory
- `$ pwd`
  - If you’re lost, it prints out where you are in relation to root (‘~’)

Copy Files to Server

- `$ scp Desktop/hello.cpp yourSEASaccount@cs31.seas.ucla.edu:Desktop`
  - This copies a file from your local desktop to the desktop on your server
- Download Cyberduck if you don't want to keep running this command
  - Check the demo in my discussion recording!

Compile/Run Code on Server

- to compile my program, hello.cpp, on the linux server
  - `$ g31 -o hello hello.cpp`
- If there are no errors, run the program
  - `$ ./hello`
- If there are errors, you can fix your code on the server or on your laptop (but you have to copy over the new version to test again)
  - Nano is a text editor that you can use on the server (check the class website to see how to use it)