

# 600.120 Intermediate Programming, Spring 2017

Misha Kazhdan

# Instructors

- Sara Miner More, [more@cs.jhu.edu](mailto:more@cs.jhu.edu)
  - Section 01: MWF 12-1:15pm
  - Section 03: TuTh 9-10:15am and Th 10:30-11:45am
- **Misha Kazhdan**, [misha@cs.jhu.edu](mailto:misha@cs.jhu.edu)
  - **Section 02: MWF 1:30-2:45pm**
- Yotam Barnoy, [ybarnoy1@jhu.edu](mailto:ybarnoy1@jhu.edu)
  - Section 04: MWF 3-4:15pm

# Plan for today

- Overview
- Distribution of ugrad accounts
- Log into lab computers, then ugrad, and get started in Unix/Linux

# Course Goal(s)

- By end of course, you'll be able to create large, complex, correct programs in C and C++
  - For some students, this comes easily; for others, not so much
  - Differences in background play a large part
  - If you're struggling, don't panic! We're here to help.
  - To become a strong programmer, you need to practice, practice, practice

# Programming is More than Coding

- In introductory courses, you learn to write code
- You also spend a good deal of time debugging it
- The larger your program, the more time you'll spend debugging
  - Code doesn't compile/run: (e.g. bad syntax, memory leaks, seg. faults, etc.)  
This problem goes away as you get better at coding
  - Code doesn't give the right result:  
This problem does not go away as you get better at coding  
But depending on how you approach it, this can either be painful or fun.

# (Long-Term) Lazy $\Leftrightarrow$ Simplicity

- As you write code, think about:
  - Abstraction:  
How hard would it be to generalize the code to solve a more general class of problems?
    - $\Rightarrow$  Fewer assumptions
    - $\Rightarrow$  Easier it is to determine why/where something goes wrong
  - Modularization:  
Are there components of the code that I can use to solve other problems?
    - $\Rightarrow$  More components
    - $\Rightarrow$  Smaller components
    - $\Rightarrow$  Easier to test/validate

# Building Skills

- This course is primarily intended to help you build skills
- Building skills takes practice, and meaningful practice takes time
- Please ask for help when you need it!

# Course Resources

- Piazza (semester-specific, often section-specific):  
<http://piazza.com/jhu/spring2017/600120>
  - Please ask questions using Piazza, rather than sending me email
  - Can make posts which are anonymous to other students
  - Can make posts which are targeted to Instructors (includes professors and CAs) only, or just to me
  - Please sign up TODAY; it's our primary form of communication
- General course website (basic resources):  
<http://ugrad.cs.jhu.edu/~cs120>
- Blackboard: where you'll submit homework and receive grades



# Grade Calculation

- Homework assignments (some solo, some in teams; some written, some programming) - 50%
- Midterm exam - 10%
- Final project (in teams) - 15%
- Final exam - 15%
- Participation - 10%

# Coding and Development

- All your coding will be done on the ugrad machines.
- From your local machine, open a secure shell to a ugrad machine [SSH]:

```
>> ssh <your username>@ugradx.cs.jhu.edu
```



Recycle Bin

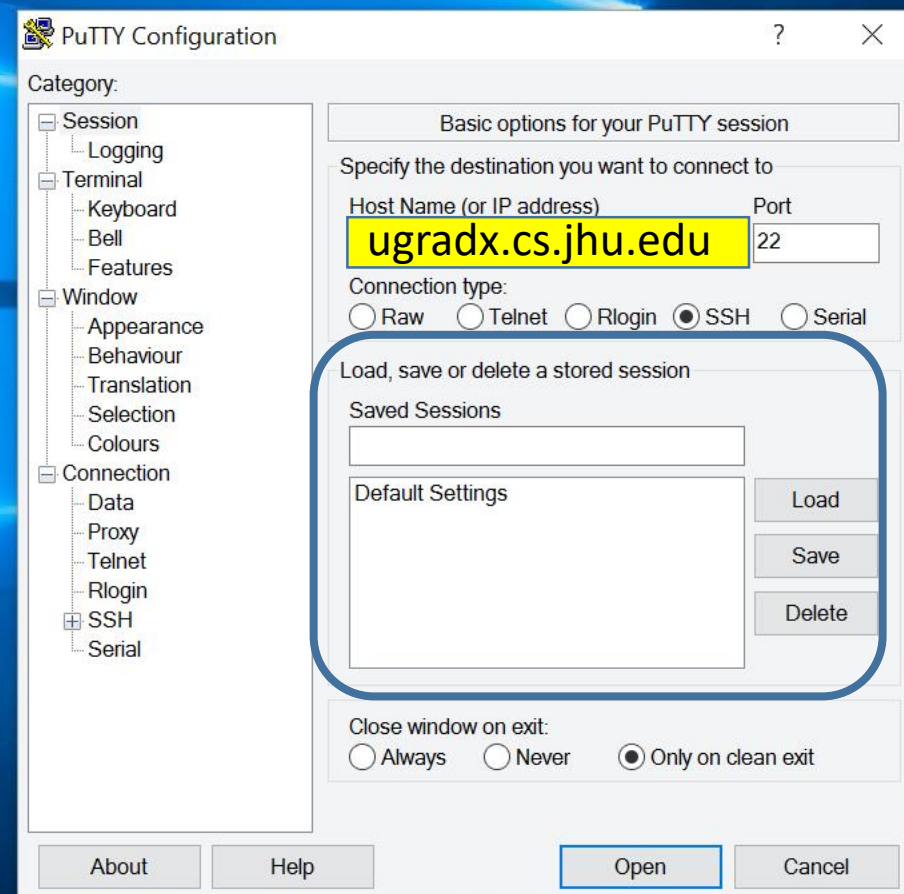


PuTTY

# Coding and Development

- All your coding will be done on the ugrad machines.
- From your local machine, open a secure shell to a ugrad machine [Putty]:  
(You may need to approve a certificate the first time you login.)

You can save your session so you don't have to enter the full name every time you login.



Ask me anything



1:45 PM  
1/29/2017

# Unix/Linux

When you login, you will be in your “home” directory.

- `pwd`:
  - prints the name of the current directory
- `ls`:
  - prints the contents of the current directory
- `cd <(sub-)directory name>`:
  - changes the current directory to the specified (sub-)directory
  - `cd ..`: go up one directory
  - `cd /`: go to the root directory
  - `cd ~`: go to the home directory
- `mkdir <directory name>`:
  - create a new directory within the current directory
- `passwd`:
  - change your password

```
misha@ugradx:~  
login as: misha  
misha@ugradx.cs.jhu.edu's password:  
Last login: Sun Jan 29 11:47:02 2017 from 72.66.33.107  
  
===== ugradx.cs.jhu.edu =====  
  
To report specific bugs with this system, please go to:  
  
http://support.cs.jhu.edu/forms/bug-report-form  
  
See https://support.cs.jhu.edu/ for answers to common questions  
about our systems. If you have further questions, please e-mail:  
support@cs.jhu.edu  
  
REMINDER: Please do not run the 'sudo' command on our Linux systems.  
  
===== Fedora release 23 (Twenty Three) / kernel 4.8.13 x86_64 =====  
  
[misha@ugradx ~]$
```