Course Introduction

CS 136L F23 – LEC 1

Yiqing Irene Huang

About us – You and Your ISA/IAs

- Introduce yourself to a neighbor
  - What is your name and program?
  - What kind of music do you like?
  - If you could choose a superpower, what could it be?
- About ISAs
  - Kevin Yang (full-time for CS 136L)
  - Yiding He (part-time for CS136L)
- About IAs
  - Rizwan Shahid , Tue 12:30
  - Mustafa Ege Ciklabakkal, Tue 14:30
  - Oluwaseun Cardoso , Thu 12:30
  - Muhammad Arsalan Khan

About us - Instructors

- Irene Huang (First half of the term)
  - New CS Lecturer
  - Lab Instructor/Supervisor in UW ECE previously (21+ years)
  - Technical Support Team Lead at IBM (2+ years)
  - Ph.D., CS at UWaterloo (2011)
- Qianqiu Zhang (Second half of the term)
  - New CS136L instructor
  - Just served the course in S23
  - Ph.D. Candidate in CS at UWaterloo

Main Topics

1. Linux Shell
2. More Linux Shell
3. Testing and Debugging
4. Shell Scripting
5. Integrated Development Environments
6. Version Control
7. The C/C++ Preprocessor
8. Memory Errors
9. Separate Compilation and Build Automation
10. Debugging

CS 136L F23 Calendar

Wk	Mo	Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	Sep	4	5	6 Classes begin	7 **NO LAB**	8	9	10
2	Sep	11 **M0 Quiz rls**	12 **Intro**	13	14 **Intro**	15 **M0 Lab rls**	16	17
3	Sep	18 **M1 Quiz rls**	19 **M0 Quiz due** **M0 Lab**	20	21 **M0 Lab**	22 **M0 Lab due** **M1 Lab rls**	23	24
4	Sep	25 **M2 Quiz rls**	26 **M1 Quiz due** **M1 Lab**	27	28 **M1 Lab**	29 **M1 Lab due** **M2 Lab rls**	30	1
5	Oct	2 **M3 Quiz rls**	3 **M2 Quiz due** **M2 Lab**	4	5 **M2 Lab**	6 **M2 Lab due** **M3 Lab rls**	7 **READ**	8 **READ**
	Oct	9 **READ** **Thanksgiving**	10 **READ**	11 **READ**	12 **READ**	13 **READ**	14 **READ**	15 **READ**
6	Oct	16 **M4 Quiz rls**	17 **M3 Quiz due** **M3 Lab**	18	19 **M3 Lab**	20 **M3 Lab due** **M4 Lab rls**	21	22
7	Oct	23 **M5 Quiz rls**	24 **M4 Quiz due** **M4 Lab**	25	26 **M4 Lab**	27 **M4 Lab due** **M5 Lab rls**	28	29
8	Oct	30 **M6 Quiz rls** **CS136 MT**	31 **M5 Quiz due** **M5 Lab**	1	2 **M5 Lab**	3 **M5 Lab due** **M6 Lab rls**	4	5
9	Nov	6 **M7 Quiz rls**	7 **M6 Quiz due** **M6 Lab**	8	9 **M6 Lab**	10 **M6 Lab due** **M7 Lab rls**	11	12
10	Nov	13 **M8 Quiz rls**	14 **M7 Quiz due** **M7 Lab**	15	16 **M7 Lab**	17 **M7 Lab due** **M8 Lab rls**	18	19
11	Nov	20 **M9 Quiz rls**	21 **M8 Quiz due** **M8 Lab**	22	23 **M8 Lab**	24 **M8 Lab due** **M9 Lab rls**	25	26
12	Nov	27	**28** **M9 Quiz due** **M9 Lab**	29	30 **M9 Lab**	1 **M9 Lab due**	2	3
13	Dec	4	5 **NO LAB** Classes end	6	7	8 Final Exam Period Starts	9	10

Mo	Week	Topics	Instructor
Sep	1	**Email class - Welcome**	**IH**
Sep	2	**Course Intro +** **M0 Preview (Shell 1)**	**IH**
Sep	3	**M0 (Shell 1) +** **M1 Preview (Shell 2)**	**IH**
Oct	4	**M1 (Shell 2) +** **M2 Preview (Test & Debug)**	**IH**
Oct	5	**M2 (Test & Debug) +** **M3 Preview (Shell Scripts)**	**IH**
Oct			
Oct	6	**M3 (Shell Scripts)**	**QZ/IH**
Oct	7	**M4 (VSCode IDE)**	**QZ/IH**
Nov	8	**M5 (Git Version Control)**	**QZ**
Nov	9	**M6 (C/C++ Preprocessor)**	**QZ**
Nov	10	**M7 (Memory Checkers)**	**QZ**
Nov	11	**M8 (Make, Build Automation)**	**QZ**
Dec	12	**M9 (GDB, Debugger)**	**QZ**
Dec	13		

Lab Lecture Times (scheduled, may not use all)

No Teaching Activites

First/Last Day of Lecture

Important Dates (CS136 Midterm, Pass deadlines, Instr Chg)

IH: Irene Huang

QZ: Qianqiu Zhang

Course Online Resources

- https://student.cs.uwaterloo.ca/~cs136l/
  - Course website, checking your progress
- https://online.cs.uwaterloo.ca/register
  - Edx course registration link
- https://online.cs.uwaterloo.ca/courses/course-v1:UW+CS136L+2023_09/course/
  - CS 136L Fall 2023 EdX link
- https://cs.uwaterloo.ca/~yqhuang/courses/cs136l/f23
  - Lecture Slides

Flipped Classroom

https://online.cs.uwaterloo.ca/courses/course-v1:UW+CS136L+2023_09/course/

- What you need to do **before** coming to the class
  - **Readings**: read the next week's module ahead of time
  - **Quizzes:** complete the module's quiz
  - **Labs:** read the lab descriptions . Attempt the labs are recommended
- What do we do in lectures?
  - First 30 minutes of mini lecture.
    - Discuss module highlights and common pitfalls to avoid.
    - A quick peek into next week lab module (for the M0 – M3)
  - Rest of time is hands-on help to finish the lab, like office hours.
- Office Hours: EdX Office Hours Page

Marking

- Quizzes
  - Most of the questions have a limited number of attempts
  - Random guess is not a good idea.
- Labs: Marmoset
  - Your solution should work on the Linux Student Environment
    - linux.student.cs.uwaterloo.ca
  - All tests are public tests
  - You have unlimited number of attempts
  - Server may get overwhelmed close to deadline
  - Start early!!!

How to Pass the Course

- CR/NCR course
  - Complete 7/10 quizzes
  - Complete 7/10 labs
  - Pass 10/10 labs
- Complete vs. Pass
  - Complete has weekly deadlines
    - Quizzes are due on Tuesdays
    - Labs are due on Fridays
  - Pass deadlines are for block of labs and there are two of them. One half through the term, one at the end of the term.
  - Lab completion has higher bar than lab pass.

Personal Expectations

- If you can complete the lab on your own and get full marks, you may feel free to **skip the weekly lecture**.
- If you're struggling in any way, you should absolutely come to class and ask questions about what you're struggling with. The idea is that often times a quick 5 minute conversation can help you with your problem and usually problems are specific to an individual (e.g. I can't tunnel into the student environment and I don't know why).

Piazza

https://piazza.com/uwaterloo.ca/fall2023/cs136l

- Rule 1: Piazza is not Reddit. Be courteous.
- Rule 2: Post questions in the appropriate folders.
- Rule 3: Read first, search second, post last
- Rule 4: Use private posts if you are discussing your answers

We do NOT use EdX as is done in CS 136

Today's Goal: SSH

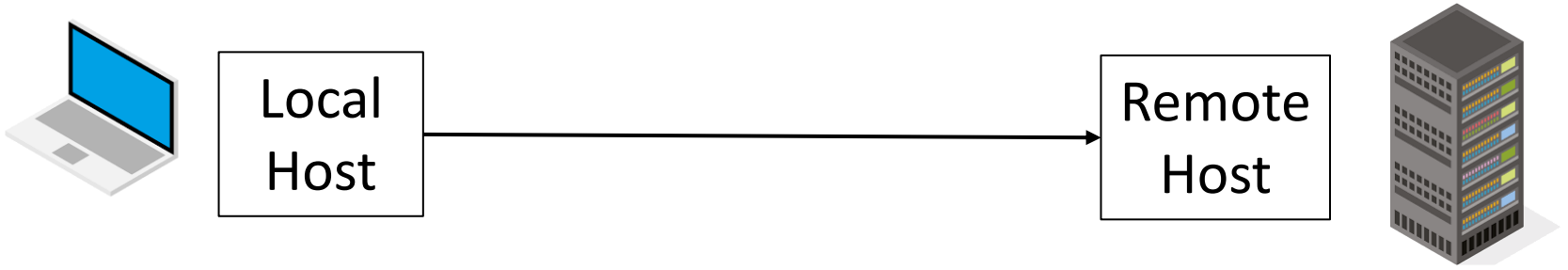
Make sure you can connect to the Linux Student Environment!

- Check in **Module 0.1** for detailed instructions.

- First set up a CS account if you haven't already:

https://www.student.cs.uwaterloo.ca/password

SSH – Linux or Mac



- Open a terminal and type

```
ssh <user_id>@linux.student.cs.uwaterloo.ca
```

where you change `<user_id>` to your personal id (e.g. yqhuang).

```
ssh yqhuang@linux.student.cs.uwaterloo.ca
```

- Angle brackets means mandatory field.
  - You do not type the angle brackets explicitly!

SSH - Windows

- Install OpenSSH on Win 10 (version 1809 or newer) or Win 11:
  - Select Settings -> Apps -> Optional Features (+ view features if on Win 11)
  - Win 10: if OpenSSH is not present in the list, select Add a Feature and then find and install OpenSSH Client
  - Win 11: Search for OpenSSH Client, select the appropriate checkbox, press Next and then select Install
- If neither of the above applies to you or you like other options
  - Git Bash https://git-scm.com/downloads
  - Putty https://www.putty.org/
  - MobaXterm https://mobaxterm.mobatek.net/
  - Xshell https://www.netsarang.com/en/free-for-home-school/
  - Openssh https://www.openssh.com/
  - Powershell https://learn.microsoft.com/en-us/powershell/
  - WSL (https://learn.microsoft.com/en-us/windows/wsl/install)
  - Dual booting with Linux

Acknowledgement

- Slides by courtesy of Carmen Bruni and Nomair Naeem
- Demo lectures by Carmen Bruni, Dave Tompkins, and Nomair Naeem

References

- CS 136L edX notes at https://online.cs.uwaterloo.ca/