ECE220: Computer Systems & Programming **Fall 2021 ZJUI**
Lab 1 **Tuesday 14 September**

Preparing for ECE220

As mentioned in the lecture, programming labs give you the opportunity to work with your peers and to practice the skills and techniques that you need to complete Machine Problems (programming assignments) in our class. Today, however, you will work individually to learn how to use some tools.

Specifically, today you will learn the basics of Git, a tool that is required for every lab and every assignment. You are also expected to review how to install and make use of the LC-3 tools. If you have never used CampusWire or similar platforms for class discussions, you may want to ask your TA to get a few tips. In such a large class, using emails or WeChat to ask questions would be extremely inefficient unless the questions are personal and related to your specific circumstances.

PLEASE NOTE that you need access to UIUC web services to complete the today's lab. If you did not come prepared with your NetID and password (and access to your email), you will need to do this lab on your own later.

Using Git for Source Control

Most of our classes as well as most real-world software developers now use Git, the version control software to manage programming assignments (and sometimes other tasks as well). When used properly, version control helps to reduce the likelihood that you lose your work (by accidentally deleting your program, for example), and, in our case, it serves as the key mechanism how to obtain the materials for the class assignments and then to hand in your completed programming codes. In future classes, Git will also help you to coordinate with your team members.

In this course, we use the github-dev.cs.illinois.edu server. You can also create your own personal account on github.com (but please be sure not to upload any assignment code to another Git server than the one hosted at illinois.edu, though, as doing so counts as cheating). In future classes, you may also use gitlab.engr.illinois.edu, which is another Git server hosted by the UIUC.

Creating Your Repository

You need a machine that has Git installed. Your TA will tell you how to boot one of the lab machines for this purpose (Ubuntu is installed on machines in both labs). Alternatively, you can create and run a virtual machine (VM) with Ubuntu using the free VM hosting software called VirtualBox. On Windows, you can consider Cygwin, or WSL (Windows Subsystem for Linux). However, please keep in mind that your assignments must pass all the tests on the Ubuntu machines in D331 lab.

To start, open the link https://github-dev.cs.illinois.edu/ece220-fa21-zjui/_release in a browser. Scroll down to read the instructions about using Git. Follow the instructions to obtain the starting materials for today's lab (such as a copy of this file) and a copy of the starting materials for MP1.

Installing the LC-3 Tools

The LC-3 tools should be already installed on the lab machines. The LC3 tools can be used test your first few MPs. The source code is available from http://lumetta.web.engr.illinois.edu/lc3tools.0.13.tar.bz2 (version 0.13 adds reverse execution capability). You will need several other utilities installed in your OS

including bzip2, tar, flex, wish, and gcc, to unpack and compile the LC3 tools. Read the directions, ask your TA for help, ask about CampusWire and Office Hours, and ask your friends. Please note that other LC-3 tools **ARE NOT SUPPORTED**. If you try to install and use LC3 tools from other places, the behaviors may differ, and as a result, you may loose points in the assignments. For this reason, please make sure you test your code on machines in D331 on the supported version of LC3 tools.