Setting up Linux for this course

It is assumed that you are using Windows 10 or 11, and have a stable internet connection. If you are using an Apple device, a Chromebook, please refer to the course instructor, or look for the device specific instructions on the web. Ensure you have a stable internet connection. If you are already using a Linux distribution, please skip to **section 3**. If you are using a version of Windows that is older than Windows 10, please skip to **section 2b**.

1. Installation of Windows Terminal

Press the Windows ⊞ key, and type in "Store". Select Microsoft's Store App. In the top search bar, look for "Windows Terminal". You should find the most popular result having more than 1K ratings. Install this app. If asked to sign into your Microsoft account, simply close the login popup. When installed, go to the next step.

If the Windows Store does not open, or if you face any issues while installing from the Store, use Windows Powershell whenever we refer to Windows Terminal.

2a. Installation of Windows Subsystem for Linux (WSL)

Launch Windows Terminal (or powershell) as an administrator. Then run these commands sequentially:

```
wsl --install -d Ubuntu
```

***If the above command does not run, check if Terminal is running as an Administrator. If it is not, try again as Administrator, and if not, then follow this:*

https://learn.microsoft.com/en-us/windows/wsl/install-manual

This will enable and install Windows Subsystem for Linux, or WSL, which is a relatively new way to enjoy the benefits of Linux, without the need to leave Windows or install heavier virtualization software. This command will also install the latest version of Ubuntu for WSL. Restart your computer and from the terminal, run the terminal and 'wsl' again. This will start Ubuntu, and ask you for a UNIX username and password. You need to enter a proper username, and a simple password to get started.

You must remember this password, as this will be asked from you time and time again. This is your superuser (or "admin") password.

If you are greeted with the green colored prompt, then close all the terminals and command prompts. We will now run Windows Terminal (or Powershell if Terminal is unavailable), and use the dropdown. Refer to Figure 2 if you are unsure where the dropdown is. From the dropdown, selecting Ubuntu will take us to the Ubuntu instance. This is our first official look at the Linux terminal.

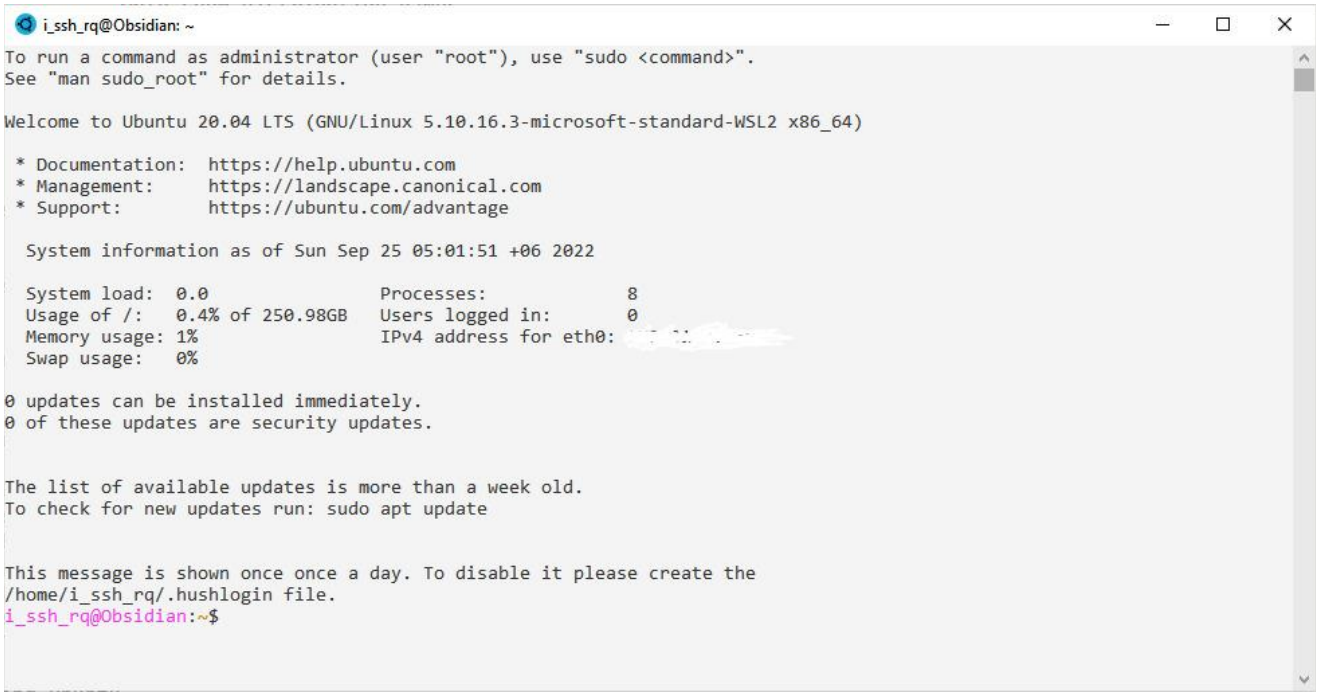

Figure 1: The first prompt in wsl (close this immediately)

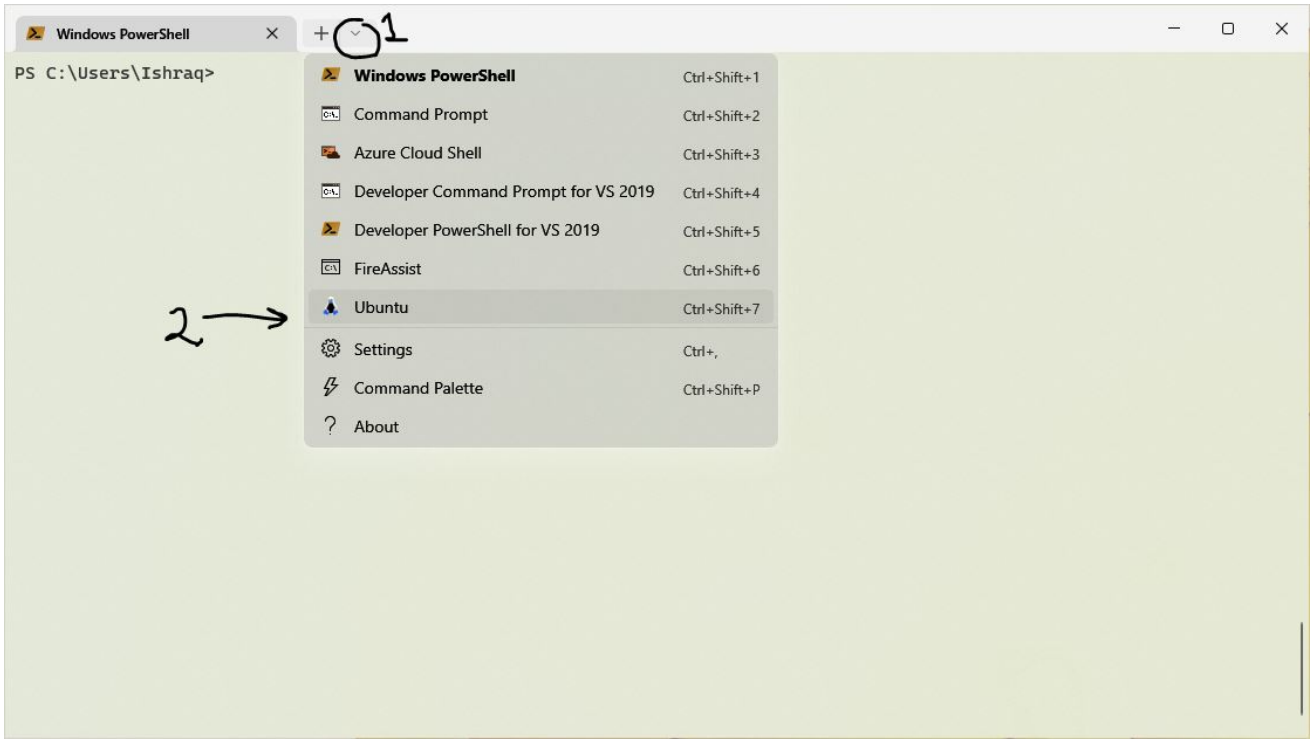

Figure 2: How we will be using WSL from now

Lastly, copy paste this line into your new WSL terminal, and make sure you are inside Ubuntu.

```
sudo echo 'LS_COLORS=$LS_COLORS:"ow=1;34:" ; export LS_COLORS' >> ~/.bashrc
```

After running this, close the terminal, then open it again. You are now done setting up WSL in your machine. We can now use this however we want. For uninstalling, please refer to this document.

2b. For Windows versions older than 10

If you are using a version of Windows that is older than 10, you need to install several alternative software packages. This section (2b) assumes that you are using a machine that has at least two cores in the CPU, and at least 8GB RAM. 4GB is barely tolerable, but your experience will be very rough, as handling both Windows, as well as Linux on top, will not be easy for the machine to handle without WSL.

If you have a machine that has 4GB RAM or below, you may need to skip this section and set up Linux via dual-boot on your machine. You can look up *"Install Ubuntu alongside Windows 10"* and you should have plenty of resources to follow. That will cover your essentials. Once you are done with the setup, skip to **section 3**.

If your system meets the requirements, follow along. Download and install VirtualBox from https://www.virtualbox.org/wiki/Downloads. Click on *"Windows Hosts"* (check Figure 3) and your download should start. Then download the latest LTS server version of Ubuntu from https://ubuntu.com/download/server. Note that this is not Ubuntu Desktop, but instead Ubuntu Server. This ensures that you only have the terminal and a handful of tools installed. This ensures a lightweight Linux setup, while making it easy to follow along.

Once downloaded, follow this helpful guide: https://hibbard.eu/install-ubuntu-virtual-box/ upto "Install and Reboot" section. See Figure 4 for details.

From now on, whenever it is mentioned that you need to open a Linux terminal, you need to run VirtualBox, then run Ubuntu from there. It will take time, so please be patient. Login via your username and password and you will have everything ready. Jump to the next section to continue. If you want to have a graphical interface of Ubuntu as well (which is not recommended for this course, so only do this if you know what you are doing), then follow this guide: https://itsfoss.com/install-gui-ubuntu-server. This guide is from an open source community, and is updated if any changes happen to the process.

VirtualBox

search...
Login Preferences

Download VirtualBox

Here you will find links to VirtualBox binaries and its source code.

VirtualBox binaries

By downloading, you agree to the terms and conditions of the respective license.

If you're looking for the latest VirtualBox 6.0 packages, see VirtualBox 6.0 builds. Please also use version 6.0 if you need to run VMs with software virtualization, as this has been discontinued in 6.1. Version 6.0 will remain supported until July 2020.

If you're looking for the latest VirtualBox 5.2 packages, see VirtualBox 5.2 builds. Please also use version 5.2 if you still need support for 32-bit hosts, as this has been discontinued in 6.0. Version 5.2 will remain supported until July 2020.

VirtualBox 6.1.38 platform packages

- Windows hosts
- OS X hosts
- Linux distributions
- Solaris hosts
- Solaris 11 IPS hosts

The binaries are released under the terms of the GPL version 2.

See the changelog for what has changed

Figure 3: Download from this link

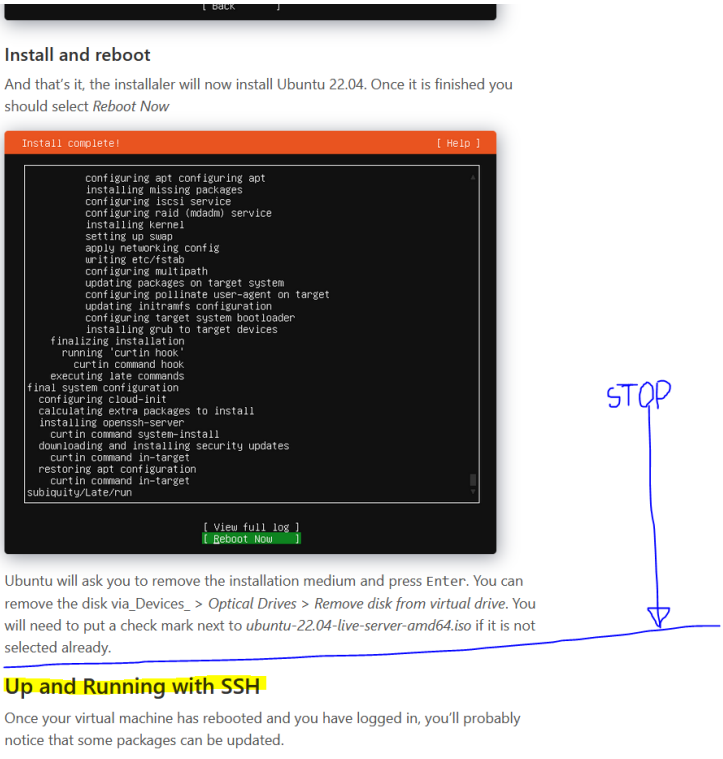

Figure 4: Continue the guide up to this point, and come back here

3. Housekeeping

Run the following command to update all the packages to their latest versions.

```
sudo apt update && sudo apt upgrade
```

You will be asked to enter your password. You need to enter the password you were asked in the previous step, to continue. That password is the superuser password. As this command will download and install the up-to-date components of the operating system, it will take some time to finish. Please wait until it is done.

Once complete, you should now be equipped with a complete Linux installation, inside Windows.

4. Finish and submit

This course is interactive, and to convey that you have successfully installed Linux, first run this command:

```
sudo apt install -y neofetch && neofetch
```

Then wait until the command shows all the output. Afterwards, present the output of the command to the instructor, or if the command doesn't work, seek help from the instructor.
