Lab Requirement 1 - Linux Basics

This week should be your icebreaker with Linux. If you never used Linux before, that is completely okay; we do not expect you did! we decided to leverage that to make sure you have installed it on your machines. No excuses will be granted for not having Linux installed by our next session on campus!

There are A LOT of ways to get Linux. We chose to use a virtual machine for the purposes of this course. This will provide a unified virtual image for all of us and minimizes the *"but it works on my machine"* problem. Getting and firing it up this way is very safe and painless. (Read the **WARNINGS** section below to understand what we mean by that!)

- Download VirtualBox (freely available for all platforms; link attached)
- Download the virtual appliance (neon.ova attached via Google Drive)
- Open VirtualBox and navigate to Files → Import Appliance...
- Choose Local File System → Locate the file you downloaded → Next >
- Choose the number of CPUs (we recommend at least 2 and at most the number of your physical CPUs - 2)
- Choose the size of RAM (we recommend at least 2 GBs and at most half of your physical RAM)
- Make sure your Base Folder has enough space available (minimum 10 GBs; recommend 20 GBs)
- Import and wait till it is done

If VirtualBox complains about **Virtualization** at any step or cause errors at the last step, make sure **Virtualization** is enabled on your machine. This is done through the machine's system setup. Usually, you press **F2** right after you power up your machine opening up the system setup before your OS kicks in. From **settings/preferences/etc** make sure **Virtualization** (sometimes called **VT-x/AMD-V**) is set to **Enabled**. The exact steps depend on your manufacturer, so you can Google it. However, if you are not 100% sure, ask for our help. Messing up these simple settings can get very problematic very quickly!

We will be available via the course's Meet link (available in the course info at the top) during the lab time slot tomorrow, so feel free to join and ask for help, discuss anything or just say hi!

WARNINGS

There are easier ways to have Linux or Linux-like functionalities; native Linux distros, macOS, and Windows Subsystem for Linux (WSL; aka, Ubuntu in the Windows Store). However, this will mean that you will be experimenting with your primary machine. While typing in a wrong command and erasing the whole *virtual* machine may sound like a fun story to tell next semester, erasing your *physical* drive with all your data (personal and projects with deadlines!) will be much "less fun" to tell!
If you opt-in to download a bootable installation image and install it on your bare-metal machine, you must be extremely careful as you may erase your whole hard drive!

Links

[1] Virtual box, https://www.virtualbox.org/wiki/Downloads

Requirement

1. Set up a Linux environment on your machine!
2. Write commands that do the following!
    a. Report ONLY your kernel version and save the output to a file named MyKernel
    HINT Refer to uname's help or manual!
    b. Create a new empty file named MyFile
    c. Make a directory in your home directory named MyDirectory
    d. Copy the MyFile to MyDirectory
    e. Go to MyDirectory and rename the copied file to MyCopy
    f. Edit MyFile using an editor to have the following line: Hello editor!
    g. Go back to your home directory and delete MyDirectory
    h. Can you create a file directly from the command line with the following lines? Helloredirection!
    Feels cool to turn copied lines to file content!

Take screenshots as you go to show your work!