

San Francisco State University
CSC 317 – Introduction to Web Development Software
Assignment One

Introduction

In the assignment one, we will be focusing on setting up our Linux virtual machine. The VM will be used throughout the semester across multiple assignments and the final project (this is optional of course, nothing we will do requires Linux specifically). However, if your laptop is running Linux already, you may skip running a VM on your laptop. Mac users have this option as well, but you will need to be comfortable with your mac to do so. Keep in mind, unless you switched your terminal defaults, you will be running a very old version of bash (in most cases, this may change overtime. Most new macs come with [zsh](#) set as the default shell). If you are on Windows, you are encouraged to lock yourself into a Linux machine (or a Linux environment) to really learn it. If you tot use WSL (Windows Subsystem for Linux) I would recommend using WSL2 and not WSL1.

For the first part of this assignment, we will begin by installing a Linux operating system on our virtual machine from the beginning. Then once our VM is installed we will survey our distribution running commands and learning about its file structure. If you already have Linux installed, you can skip the installation process and move into the later portion of this assignment.

At the end of the assignment, you will be asked question about Linux, some will require you to run some commands line tools, others will require some research. This is to help you get more acquainted with Linux.

Setup

The setup for assignment one will be kind of lengthy, but it will get you setup with a basic install of a Linux. For this assignment, and the rest of the semester(optional), we will be using Ubuntu as our OS Distro of choice. You may substitute your favorite distro if you like. Please keep in mind if you do, you are responsible for converting all necessary steps that will work for your distro.

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Windows:

1. Go to [VM Player Download](#) to download the latest version of VMWare Workstation Player.
 - a. You can use VirtualBox for windows if you like, but the setup for VMWare Player on windows is simpler. MacOS does not have a free version of VMWare that I know of.
2. In VMWare WorkStation player.
3. Download the Ubuntu ISO from the following link: [Ubuntu ISO Download](#)
4. Following along with the video posted on ilearn to setup VM.

MacOS

1. Go to [VirtualBox Download](#)
2. Then down the latest version of Virtual box for your operating system.
3. While the application is downloading, also download the VM Extension Pack as well. Make sure to use the same version for Virtual Box and VirtualBox Extension Pack.
4. Install Virtual Box, all selected fields can be left to their default values.
5. Once VB is installed, double-click the Extension Pack to install this as well.
6. Download the Ubuntu IOS from the following link:
 - a. <https://ubuntu.com/download/desktop>
7. Follow along with the video on ilearn for setting up the VM.

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Requirements

- Installed Linux according to the instructions in the video. If you chose to use a different distro, this is OK.
- Next, answer the following questions:
 1. What is the command to determine the kernel version of your OS? Please write the command and its output.
 2. What is the command to determine the current user logged in? Please write the command and its output.
 3. What is the Linux command or commands to list all user accounts on a Linux system? ONLY user account names should be shown!
 4. Using your answer from the previous question, what would be the command or commands to show the the list of users as a comma separated list.
 - i. You may need to use the | (pipe command) to link two commands together.
 5. What is the command or commands that will show you the last 15 lines of the /var/log/kern.log file? Please write the commands and copy the output.
 - a. If your system does not have a kern.log, simply print which ever file in your system stores system logs.
 - b. Note, WSL2 may not have a kern.log file at all.
 6. What is the command or commands that will show you all the login attempts for your username? Please write the commands and copy the output.
 7. Using the dmesg command, show only the messages relating to warnings and errors. Also ensure the output is using a human readable time format. To verify that only error and warning messages are being show what option of dmesg would you use? Show both commands that were used.
 8. What command would you use to display free **disk** space? List the command and its output.
 9. What is the command or commands that would list the contents of the /var/log directory in alphanumeric order? List the command and its output.
 10. What is the command or commands that would list all the empty files or folders in your user's home directory?
 11. What is the command or commands used to list the files in /var/log in order of their size? List the command and its output.
 12. What is the command or commands used to list the top 10 file who use the most disk space? What is this command(s) and show its output?
 13. What is the command that will show you the last 15 commands you have typed? List the command and its output.
 14. What is the difference between the commands **less** and **more**?

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Submission

1. Please submit the answers to the above question in PDF to ilearn. For each question (except for the first and last one, just simply give your answer), please list the following:
 - a. Command used
 - b. Copy-n-paste or take a picture of the output of the used command. Pictures are OK as well.