**CSIS 2260 - Lab #5**

***Introduction to Linux***

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Due date: 20:59 Feb 12, 2021 (Pacific Time)

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**DO NOT upgrade to Ubuntu 20.04 LTS if the message prompts.**

**You may not use the numeric keypad on your keyboard in Ubuntu. It is turned off by default.**

**Insert the required screenshots in the Word file. Do not submit the screenshots separately.**

**Write down your answers in the highlighted areas.**

**Objectives:**

To learn about the basic features of a distribution of the Linux operating system, ***Ubuntu***. Learn about user account creation and basic commands for files and directories management.

**Equipment/Document Required:**

1. A PC with VirtualBox installed and Ubuntu VM created.
2. The document *Introduction to UNIX Commands and Scripting*.

**About Ubuntu**

Ubuntu is a free and open-source operating system. Open source means that is has been created by a collective of thousands of volunteers and that the source code is freely available and constantly being improved upon and examined for bugs.

1. **Working in the Ubuntu Window Environment [\_\_\_\_\_/4]**
2. Open the Ubuntu system in VirtualBox that you installed in the previous lab. Log in and click the***Show Applications*** icon at the lower left-hand corner. Look for the ***Setting*** icon and click to open it. From the new window that appears, the settings that you can choose are on the left. Select ***Background*** and change the background of your display by selecting a new wallpaper. Close the ***Settings*** by clicking the **x** on the upper left-hand corner of the window.

Note: If Ubuntu does not display in full in the VirtualBox window, click ***Devices*** at the top of the VirtualBox window and select “***Insert Guess Additions CD image…***”. Follow the steps as requested and put in your password. When the system finishes its installation, you need to restart the Ubuntu system.

1. Click the***Show Applications*** icon again and see other applications that are available (you may need to click ***All*** at the bottom if only the ***Frequent*** Applications are displayed). List FOUR other applications that are available.

**Calculator**

**Calendar**

**Cheese**

**Files**

1. Click the ***Files*** icon to open a file management window. Select ***Home****,* which shows your personal files and subdirectories. Close the ***Files***window.
2. **Working with the Terminal [\_\_\_\_\_/6]**
3. Go to ***Show*** ***Applications***and start up a ***Terminal*** application. A Terminal is similar to the Command Prompt in Windows, which a command-line interface to the system. This means that you can get direct access to all the functionality by typing in commands. In some cases, using a GUI is superior, but for other tasks being able to directly execute multiple tasks with a single line of commands can save you lots of time. Whether one or the other is the best choice depends on the task that you are performing. For the rest of this lab and lab 6, you will learn to use the command line for small tasks. Refer to Section 0 of the document *Introduction to UNIX Commands and Scripting* on how you can get help on using the commands.
4. Create a new user *c2260* with password *hello*.

First, try to type in the following command in the *Terminal*: **adduser c2260**

What is the message showing on screen?

**adduser: Only root may add a user or group to the system.**

Now try the following command: **sudo adduser c2260**

You have to enter your password (***csis2260***) and then enter ***2260*** as the password for the newly created user. ***Note:*** when you type the password, there is nothing shown on the display. So just type the password and press *Enter*. You can enter ***c2260*** as the Full Name and skip the other information asked by pressing *Enter*.

Note that the ***sudo*** command allows you to execute a command as a *superuser*. You may use the command ***man sudo*** to check the usage.

1. Switch to the newly created account by clicking the down arrow on the upper right of the Ubuntu window, click the right arrow next to your account name, and select ***Switch******User***. Log into the account *c2260* and skip through the Ubuntu introductory pages.

Open *Terminal* and try to create a new user account test using the command ***sudo*** ***adduser*** ***test***. Enter the password for *c2260* (***2260***) as requested. What is the message displayed?

**c2260 is not in the sudoers file. This incident will be reported.**

Switch back to your original account and grant root privileges to the user *c2260* as follows.

Type the following command in a *Terminal*

**sudo /usr/sbin/visudo**

Enter your password (***csis2260***).

Use down arrow on your keyboard to move down the file. Under *User privilege specification*, add the new line for *c2260* as follows (shown in the red color)

# User privilege specification

root ALL=(ALL:ALL) ALL

c2260 ALL=(ALL:ALL) ALL

Note that you must use upper case for the word “ALL”. Press *control* and *x* at the same time to exit the file, (the caret symbol is for the ctrl/control), then press ‘**Y**’ to save it, and press ***Enter*** for the message “*File Name to Write: /etc/sudoers.tmp*” to confirm the change. You may have a look at <https://www.unixtutorial.org/how-to-use-visudo/> for more on how to use ***visudo***.

Make sure you exit the editor first and then switch into the account *c2260*. Try to create a new user account ***test*** with password ***test*** in the ***Terminal***. Is the account successfully created?

**yes**

1. Delete the newly created account *test* (try to figure out the command needed). What is the command to delete the user account *test*?

**sudo deluser test**

Log out from account *c2260* and switch back to your original account.

1. **UNIX Tutorial [\_\_\_\_\_/4]**

Refer to *Introduction to UNIX Commands and Scripting* for this part of the lab. You are required to complete Sections 0, 1 and 2.1-2.3 (page 1-6).

1. Provide the answers to Exercise 1b

What do you think the command ls ~ would display?

**contents of the home directory**

What do you think the command ls ~/.. would display?

**list of user directories**

1. **Review Exercise** **[\_\_\_\_\_/6]**

Carry out the following tasks and record the commands used on the right.

|  |  |  |
| --- | --- | --- |
|  |  | Command(s) used |
| 1 | Create a folder ***csislab*** under your home directory. | **mkdir ~/csislab** |
| 2 | Go to the folder ***csislab***. | **cd ~/csislab** |
| 3 | Under ***csislab***, create the file ***test.txt*** by using the command on the right | ***man ls > test.txt*** |
| 4 | Make a copy of the file ***test.txt*** and call it ***test1.txt***. | **cp test.txt test1.txt** |
| 5 | Create a subfolder ***temp*** under ***csislab***. | **mkdir temp** |
| 6 | Make another copy of the file ***test.txt*** and call it ***test.bak*** |  |
| 7 | Display the files and directory inside ***csislab*** | **ls** |
| 8 | Move the file ***test.bak*** to the ***temp***. | **mv test.bak temp/** |
| 9 | Display the files and directory inside ***temp*** to check if the file ***test.bak*** has been moved to ***temp*** (Take a screenshot from within the ***temp*** folder and insert it after the table) | **ls temp/** |
| 10 | Remove the subfolder ***temp***. | **rm temp/test.bak**  **rmdir temp/** |
| 11 | Display the files and directory inside ***csislab*** to ensure the folder ***temp*** has been removed (Take a screenshot from within the ***csislab*** folder and insert it after the table) | **ls** |

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1. **Shutdown the Virtual Machine**
2. Power off the Ubuntu virtual machine.
3. Close Oracle VM VirtualBox Manager.

**Submission**

1. Save your lab file as YourFirstname\_yourID\_Lab5.docx.
2. Submit the WORD file through Blackboard before the due (do not send labs by email please. Any lab submitted by email will be ignored). Late submissions will not be marked, and the student will lose the mark of that lab.
3. You may submit your work multiple times, but only the LAST submission before the due will be graded.