# Assignment #2 – Basic Linux Commands (Part 1) [3%]

This assignment relates to the following Course Learning Requirements:

CLR 3: Work with GUI and command-line interfaces

Objective of this Assignment:

The objective of this assignment is to introduce students to basic Linux commands.

# Pre-Assignment Instructions:

1. Launch the VMWare Workstation and run the Ubuntu Virtual Machine instance from last week.
2. Launch the Terminal Window.

**Assignment Tasks:**

Follow the exercises by entering the commands and recording the results into the word file provided in this assignment. Once completed, upload the Word file to Brightspace.

Note: Whenever you are unsure of a command, you can look up the definition and usage using the keyword **man** (short for **manual page**) and the command name. The first exercise demonstrates the usage of a manual page.

**Exercise #1: Read the manual pages of the pwd command**

Type the following into the command prompt and hit **<Enter>:**

**man pwd**

What is the purpose of the **pwd** command?

pwd prints the full filename of the working directory.

Press **q** to quit the manual pages of **pwd**.

**Exercise #2: Examine the cd command**

Before proceeding, read the following article about the differences between Absolute path and Relative path:

<https://www.geeksforgeeks.org/absolute-relative-pathnames-unix/>

Type the following into the command prompt and hit **<Enter>:**

**help cd**

What is the purpose of the **cd** command?

To change the current working directory

Type the following into the command prompt and hit **<Enter>:**

**man cd**

Is there a manual page entry for the **cd** command?

There is no manual page entry for the cd command

Type the following commands **(in bold)** and press **<Enter>** after each command:

**cd**

Record the bash prompt: user@localhost :~$

**pwd**

Record the output of that command**: /home/tunr**

**cd ~** (note: this brings you into your home directory)

Record the bash prompt: user@localhost :~$

**pwd**

Record the output of that command: **/home/tunr**

**cd /etc**

Record the bash prompt: user@localhost :/etc$

**pwd**

Record the output of that command: **/etc**

**cd ..**

(Note: this brings you one level up, in this case **etc'**s parent directory, which is root directory)

(Note: don’t forget the <space> character between ‘cd’ and ’..’!

Record the bash prompt: user@localhost :/$

**pwd**

Record the output of that command: **/**

**cd home/*user*** *(use your actual username instead of “user”)*

Record the bash prompt: user@localhost :~$

Note that we are using the relative path.

What would the command line look like if we were to use the absolute path?

**cd /home/user**

**pwd**

Record the output of that command: **/home/tunr**

**cd /usr/local/bin/**

Record the bash prompt: user@localhost :/usr/local/bin$

**pwd**

Record the output of that command: /usr/local/bin

**cd ../../sbin**

Record the bash prompt: user@localhost :/usr/sbin$

**pwd**

Record the output of that command: /usr/sbin

**cd /**

Record the bash prompt: user@localhost :/$

**pwd**

Record the output of that command: /

**cd bin**

Record the bash prompt: user@localhost :/bin$  
Note that we are using the relative path. What would the command line look like if we were to use the absolute path?

cd /bin

**pwd**

Record the output of that command: /bin

**Exercise #3: Examine the ls command**

The **ls** commands lists the directory contents. Explore the **ls** command by typing the following commands:

**ls /bin/ls**

**ls /home/*user***

**ls -a /home/*user***

**ls -al /home/*user***

**ls /ho**, then press the **[Tab]** key – the shell will fill in the rest of the file name for you.

*Press the 'up arrow' key twice. You will notice that previously typed in commands can be recalled by using the arrow keys.*

The **more** command can be used to page through a long list of results. Follow the steps outlined below:

**cd /etc**  - to go into the /etc directory (lots of files in here!)

**ls -la**

**ls -al | more**  - to view the contents one screen at a time

The piping character is the **|** symbol (**Shift-\)**

Use the [spacebar] to jump to the next screen of information.

You can use **q** to abort the command

**cd /home**

**Exercise #4: Examine the mkdir command**

In some exercises, we will expose the login and hostname as follows: user@localhost. Yours will differ. Please only enter the command in bold.

The **mkdir** command is used to make directories. Follow the steps outlined below:

user@localhost :/home$ **cd**

What is the purpose of the cd command without arguments?

Returns you to the home directory.

user@localhost :~$ **mkdir cst8102 ; cd cst8102**

user@localhost :~/cst8102$ **mkdir labs tests**

user@localhost :~/cst8102$ **ls**

What is the output of the above command?

labs tests

user@localhost :~/cst8102$ **mkdir labs/lab01 tests/test01**

user@localhost :~/cst8102$ **ls labs tests**

What is the output of the above command?

Labs: lab01 tests: test01

user@localhost :~/cst8102$ **mkdir**  **lectures/lecture01**

Record the error message:

Mkdir: cannot create directory ‘lectures/lecture01’: No such file or directory

Explain why this command did not execute successfully:

The command attempted to create a directory inside of a file that doesn’t exist (the lectures file).

user@localhost :~/cst8102$ **mkdir -p lectures/lecture01**

Did the command execute successfully?

Yeah, -p allows for creation of sub-directories within a directory.

**Exercise #5: Examine the rmdir command**

The **rmdir** command is used to remove directories. The directories must be empty before they can be removed. Follow the steps outlined below:

user@localhost :~/cst8102$ **ls -l**

What is the output of that command? (Give a description)

Gives a detailed description of files contained within the cst8102 directory, including their creator, creation time, and various other information.

user@localhost :~/cst8102$ **rmdir tests**

user@localhost :~/cst8102$ **ls -l**

Record the error message:

Rmdir: failed to remove ‘tests’: Directory not empty.

user@localhost :~/cst8102$ **cd tests**

user@localhost :~/cst8102/tests$ **rmdir test01**

user@localhost :~/cst8102/tests$ **cd ..**

user@localhost :~/cst8102$ **rmdir tests**

Does the command produce an error message?

No error message was observed\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/cst8102$ **rmdir lectures/lecture01**

user@localhost :~/cst8102$ **rmdir lectures**

user@localhost :~/cst8102$ **ls**

Is lectures removed?

Both lectures and tests have been removed, leaving only labs.

**Review Exercise:**

Enter the commands below in your home directory.

**1. mkdir ~/lab2**

**2. cd lab2**

**3. mkdir linux ./windows ./windows/win8**

**4. mkdir linux/ubuntu ./linux/fedora**

**5. rmdir linux**

**6. rmdir windows**

**7. mkdir -p ~/lab2/linux/android/lollipop**

**8. rmdir -p windows/win8**

**9. cd windows**

**10. cd linux/android/lollipop**

**11. cd ../../../**

**12. pwd**

Answer these questions based **only** on the above 12 commands:

1. How many directories have you successfully deleted?

Two

List them using absolute path:

/home/tunr/lab2/windows

/home/tunr/lab2/windows/win8

1. How many directories in total have you created? (Including deleted directories)

Eight

List them by names:

Lab2

Windows

Linux

Win8

Fedora

Ubuntu

Android

Lollipop

1. How many directories are left in the directory lab2?

Five

List them using relative paths: (current directory is user’s home directory)

lab2/linux

lab2/linux/android

lab2/linux/fedora

lab2/linux/ubuntu

lab2/linux/android/lollipop

1. How many error messages have you encountered?

Three

Record the error message along with the command number (1-12):

5. rmdir: failed to remove ‘linux’: Directory not empty

6. rmdir: failed to remove ‘windows’: Directory not empty

9. bash: cd: windows: No such file or directory

1. Record the output of the command **pwd** :

/home/tunr/lab2