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

This assignment relates to the following Course Learning Requirements:

CLR 3: Work with GUI and command-line interfaces

Objective of this Assignment:

This assignment will continue experimenting with 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.

**Exercise #1: Examine the touch command**

The **touch** command updates different time stamps. As a side benefit, it is used to create empty files.

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

user@localhost :~$ **touch clock**

user@localhost :~$ **ls -l clock**

Record the time stamp: rw-rw-r-- 1 tunr tunr 0 Sep 30 20:53 clock

user@localhost :~$ **sleep 61**

**\*\* Wait for one minute. \*\***

user@localhost :~$ **touch clock**

user@localhost :~$ **ls -l clock**

Record the time stamp: -rw-rw-r-- 1 tunr tunr 0 Sep 30 20:58 clock

**Exercise #2: Examine the cp command (Copy files to a directory)**

The **cp** command makes a copy of an existing set of files or directories into another area of the system.

The syntax for the cp command is:

**cp [-r] *source* *destination***

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

user@localhost :~$ **mkdir lab3ex**

user@localhost :~$ **cd lab3ex**

user@localhost :~/lab3ex$ **touch f1 f2 f3**

user@localhost :~/lab3ex$ **ls**

What is the output of that command?

\_\_f1 f2 f3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex$ **mkdir lab3**

user@localhost :~/lab3ex$ **ls**

What is the output of that command?

F1 f2 f3 lab3\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex$ **cp f1 f2 f3 lab3**

user@localhost :~/lab3ex$ **ls lab3**

What is the output of that command?

F1 f2 f3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex$ **mkdir coffee**

user@localhost :~/lab3ex$ **cd coffee**

user@localhost :~/lab3ex/coffee$ **touch cream sugar**

user@localhost :~/lab3ex/coffee$ **cd ..**

user@localhost :~/lab3ex$ **cp coffee/cream coffee/sugar lab3**

user@localhost :~/lab3ex$ **ls lab3**

What is the output of the command?

Cream f1 f2 f3 sugar \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Exercise #3: Copying directories to a directory (-r option)**

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

user@localhost :~/lab3ex$ **mkdir dir1 dir2 dir3**

Record the command that you use to verify that the directories have been created? ls\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex$ **cp dir1 dir2 dir3 lab3**

Record one of the messages displayed on the screen:

cp: -r not specified; omitting directory 'dir1'\_\_\_

user@localhost :~/lab3ex$ **ls lab3**

Have the directories been copied? \_\_\_no\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex$ **cp -r dir1 dir2 dir3 lab3**

user@localhost :~/lab3ex$ **ls lab3**

Have the directories been copied? Yes, they have\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost:~/lab3ex$ **sudo apt-get install tree**

(hint: the above command installs “tree” command which is not included in the default Ubuntu installation)

user@localhost:~/lab3ex$ **tree**

**Exercise #4: Copying directories to a directory, cont'd (-r & --parents option)**

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

user@localhost :~/lab3ex$ **mkdir -p parent/child**

user@localhost :~/lab3ex$ **cd parent ; touch f1 ; cd ..**

user@localhost :~/lab3ex$ **cp -r --parents parent/child lab3**

user@localhost :~/lab3ex$ **tree lab3**

What is the output of the command?

lab3

├── cream

├── dir1

├── dir2

├── dir3

├── f1

├── f2

├── f3

├── parent

│   └── child

└── sugar

**Exercise #5: Examine the mv command (Renaming files)**

The **mv**, for Move File or Directory, command moves files and directories to a different directory. It is also used to rename files within the same directory.

The syntax for the mv command is:

**mv *source destination***

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

user@localhost :~/lab3ex$ **cd lab3**

user@localhost :~/lab3ex/lab3$ **mv f1 m1**

user@localhost :~/lab3ex/lab3$ **ls**

Has the file been renamed from f1 to m1?

Yes, it has.

**Exercise #6: Moving files (also mv command)**

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

user@localhost :~/lab3ex/lab3$ **touch red green blue**

user@localhost :~/lab3ex/lab3$ **mkdir colors**

user@localhost :~/lab3ex/lab3$ **mv red green blue**

Record the error message:

mv: target 'blue' is not a directory\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex/lab3$ **mv red green blue colors**

user@localhost :~/lab3ex/lab3$ **ls**

Are the files red, green and blue still in the current directory?

No\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex/lab3$ **ls colors**

Have the files been moved?

They have been moved to the lab3/colors directory\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Exercise #7: Moving directories**

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

user@localhost :~/lab3ex/lab3$ **mkdir toddlers children sandbox**

user@localhost :~/lab3ex/lab3$ **mv toddlers children sandbox**

Are the toddlers and children in the sandbox?

Yes, they are\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex/lab3$ **cd ..**

**Exercise #8: Examine the rm command (Deleting files)**

The **rm** or Remove Files or Directory command allows you to delete the content of any directory. It is both a dangerous and useful command because of its flexibility. Unlike DOS and Windows, a file that is deleted in Linux is gone.

The syntax for the rm command is:

**rm *file*\_*list***

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

user@localhost :~/lab3ex$ **cd lab3/sandbox**

user@localhost :~/lab3ex/lab3/sandbox$ **touch child1 child2 child3**

user@localhost :~/lab3ex/lab3/sandbox$ **ls**

Are child1,child2 and child3 in the sandbox? Yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex/lab3/sandbox$ **rm child1 child2 child3**

user@localhost :~/lab3ex/lab3/sandbox$ **ls**

Are child1,child2 and child3 still in the sandbox? No, the files have been deleted\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost :~/lab3ex/lab3/sandbox$ **cd ..**

user@localhost :~/lab3ex/lab3$ **rmdir sandbox**

Record the error message

\_\_\_ rmdir: failed to remove 'sandbox': Directory not empty

user@localhost :~/lab3ex/lab3$ **cd ..**

**Exercise #9: Deleting directories**

user@localhost :~/lab3ex$ **rmdir lab3**

Record the error message:

rmdir: failed to remove 'lab3': Directory not empty \_\_

user@localhost :~/lab3ex$ **rm -r lab3**

Has the directory been deleted?

Yes, and everything within lab3 as well\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Exercise #10: Viewing files with cat**

**Cat** is a utility to view, create, or append to small files.

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

user@localhost :~/lab3ex$ cd; **cat /etc/issue**

user@localhost :~$ **cat /etc/fstab**

user@localhost :~$ **cat /etc/issue /etc/fstab**

user@localhost :~$ **cat .bashrc | more**

**Exercise #11: Clear screen with command clear**

user@localhost :~$ **clear**

**Exercise #12: Redirect output to a file ( > )**

user@localhost:~$ **ls -al ~/ > lsout**

user@localhost:~$ **cat lsout**

user@localhost:~$ **ls -al / > lsout**

user@localhost:~$ **cat lsout**

Is “lsout” overwritten? Yes,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

user@localhost:~/ $ **ls -a /etc >> lsout**

user@localhost:~/$ **cat lsout | more**

Is lsout overwritten? No,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Exercise #13: Not to overwrite a file**

user@localhost:~$ **set -C**

user@localhost:~$ **ls /home > lsout**

Record the message: \_ bash: lsout: cannot overwrite existing file

**Review exercise:**

Assume that the commands listed below are executed in the user’s home directory.

**cd; mkdir -p ~/lab3rv/linux**

**cd lab3rv/linux**

**touch ubuntu fedora**

**cp ubuntu fedora ../**

**cp fedora mint**

**mv fedora ~/lab3rv**

**mv ubuntu arch**

**mkdir -p ~/lab3rv/windows ; cd ~/lab3rv/windows**

**touch win7 win8**

**cp -r ~/lab3rv/windows ~/lab3rv/linux**

**cd ..**

**rm -r ~/lab3rv/windows**

Answer the following questions after executing the 12 commands above:

1. How many directories are created during the review exercise? (Including deleted directories)

Three are created

List them using absolute paths:

/home/lab3rv

/home/lab3rv/linux

/home/lab3rv/windows

1. How many regular files remain in the directory ~/lab3rv? Two\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Do not include files in sub-directories).

List them using absolute paths:

/home/lab3rv/ubuntu

/home/lab3rv/fedora

1. How many regular files are left in the directory ~/lab3rv/linux? Two\_\_\_\_\_\_\_\_\_\_\_\_\_

(Do not include files in sub-directories).

List them using relative paths (Assume the current directory is the user’s home

directory):

/lab3rv/linux/arch

/lab3rv/linux/mint

1. What is the current directory at the end of the review exercise?

user@localhost:~/lab3rv

1. How many directories are deleted successfully? one

List them using absolute paths:

/home/lab3rv/windows