**CSCD 240**

**Lab 2**

**NOTE: Capture means copy and paste from a command line into a text editor. “Capture command xyz” means to capture the xyz command AND its resulting output. If the question does not say capture still capture all the commands. You must complete this lab via ssh into cslinux.eastern.ewu.edu**

1. Capture the results of the uname –a command.

jaimew@cslinux:~$ uname -a

Linux cslinux 3.2.0-53-generic #81-Ubuntu SMP Thu Aug 22 21:01:03 UTC 2013 x86\_64 x86\_64 x86\_64 GNU/Linux

1. Clearly explain why programs should be placed in /bin or /usr/bin.

In linux that is the suggested location for executables.

1. You are asked to use a program named mystery which you have never used before. Explain how you would find information on the program and what it does. List all the ways (Google/Bing is not an option)

jaimew@cslinux:/bin$ ls -al less

-rwxr-xr-x 1 root root 149384 Aug 10 2011 less

jaimew@cslinux:/bin$ less –help

jaimew@cslinux:/bin$ man less

jaimew@cslinux:/bin$ file less

less: ELF 64-bit LSB executable, x86-64, version 1 (SYSV), dynamically linked (u ses shared libs), for GNU/Linux 2.6.15, BuildID[sha1]=0x55c84d30c5d1103947ba0dfd 8c4b597c49fa1b66, stripped

jaimew@cslinux:/bin$ stat less

File: `less'

Size: 149384 Blocks: 296 IO Block: 4096 regular file

Device: 801h/2049d Inode: 187 Links: 1

Access: (0755/-rwxr-xr-x) Uid: ( 0/ root) Gid: ( 0/ root)

Access: 2013-09-30 14:10:18.956482395 -0700

Modify: 2011-08-10 13:29:07.000000000 -0700

Change: 2012-05-21 10:21:23.779991935 -0700

Birth: -

1. There are many other environment variables available to the user. Capture the printenv command. Describe 3 of the environment variables.

PATH=/usr/local/jdk1.7.0\_25/bin:/usr/local/jdk1.7.0\_25/jre/bin:/usr/local/sbin:/usr/local/bin:/usr /sbin:/usr/bin:/sbin:/bin:/usr/games This variable alerts the system to where executables live.

PWD=/home/EASTERN/jaimew The system default working directory for this user.

HOME=/home/EASTERN/jaimew The system default home directory for this user.

1. In class we discussed the use of the accent (back tick) for when it comes to executing the date command. Can you use the accent on the ls command? How would you use the accent on the ls command? Capture the usage of the accent on the ls command.

jaimew@cslinux:~$ file `ls`

cscd240: directory

Desktop: directory

Documents: directory

Downloads: directory

findld.txt: ASCII text

Music: directory

netstorage: symbolic link to `/mnt/ns-jaimew'

Pictures: directory

Public: directory

Templates: directory

Videos: directory

1. Capture the output of the file command on the chmod executable. (Where does chmod live?) Explain the information being displayed.

jaimew@cslinux:/bin$ file chmod

chmod: ELF 64-bit LSB executable, x86-64, version 1 (SYSV), dynamically linked (uses shared libs), for GNU/Linux 2.6.24, BuildID[sha1]=0xe4ff3d82af4ea88dda49e132dce7e17c28908eea, stripped

chmod is an executable and linkable format, 64 bit Linux Standard Base model for standardization runs both on 32 and 64 bit machines, uses shared libraries and for security has a SHA1(encryption) signature.

1. Capture the output of the stat command on the chmod executable. Explain the information being displayed.

jaimew@cslinux:/bin$ stat chmod

File: `chmod'

Size: 51760 Blocks: 104 IO Block: 4096 regular file

Device: 801h/2049d Inode: 16446 Links: 1

Access: (0755/-rwxr-xr-x) Uid: ( 0/ root) Gid: ( 0/ root)

Access: 2013-09-30 08:38:47.334147814 -0700

Modify: 2012-11-19 14:25:16.000000000 -0800

Change: 2012-12-18 15:39:42.698032970 -0800

Birth: -

1. Try and delete chmod. Did it delete why or why not?

jaimew@cslinux:/bin$ rm chmod

rm: remove write-protected regular file `chmod'? y

rm: cannot remove `chmod': Permission denied

1. Try and delete chmod and capture the output from standard error to a file named err.txt

jaimew@cslinux:/bin$ rm chmod 2> ../home/EASTERN/jaimew/cscd240/lab2/err.txt

y

jaimew@cslinux:/bin$ cd ~

jaimew@cslinux:~$ cd cscd240/lab2/

jaimew@cslinux:~/cscd240/lab2$ ls

err.txt

jaimew@cslinux:~/cscd240/lab2$ cat err.txt

rm: remove write-protected regular file `chmod'? rm: cannot remove `chmod': Permission denied

1. Capture the command to create test1, test2, test3, test33, stu1, stu2, stu22.

jaimew@cslinux:~/cscd240/lab2$ touch test1 test2 test3 test33 stu1 stu2 stu22

1. Using meta characters and a single ls command list all files named test.

jaimew@cslinux:~/cscd240/lab2$ ls test\*

test1 test2 test3 test33

1. Using meta characters and a single ls command list only the files with the number 2 or 22 in them.

jaimew@cslinux:~/cscd240/lab2$ ls \*2\*

stu2 stu22 test2

1. Using meta characters and a single ls command list only the files with a single 2 not 22 in them.

1. In your home directory, capture the ls command piped to more, and the output from more.

jaimew@cslinux:~$ ls | more 1> more.txt

jaimew@cslinux:~$ ls

cscd240 Desktop Documents Downloads findld.txt more.txt Music netstorage Pictures Public Templates Videos

jaimew@cslinux:~$ cat more.txt

cscd240

Desktop

Documents

Downloads

findld.txt

more.txt

Music

netstorage

Pictures

Public

Templates

Videos

1. Issue the which command on ls. Was and where was the command found?

jaimew@cslinux:~$ which ls

/bin/ls

1. Issue the which command on pthread.h. Was the command found? If it was not found why not? How would you modify this.

1. Using only octal values add executable access to test1, test2, test3.

jaimew@cslinux:~/cscd240/lab2$ chmod 755 test1 test2 test3

jaimew@cslinux:~/cscd240/lab2$ ls -al test?

-rwxr-xr-x 1 jaimew IT-GenericLinuxGroup 0 Sep 30 22:23 test1

-rwxr-xr-x 1 jaimew IT-GenericLinuxGroup 0 Sep 30 22:23 test2

-rwxr-xr-x 1 jaimew IT-GenericLinuxGroup 0 Sep 30 22:23 test3

1. Using only alphanumeric characters remove read access from stu1 and stu2.

jaimew@cslinux:~/cscd240/lab2$ chmod -r stu1 stu2

jaimew@cslinux:~/cscd240/lab2$ ls -al stu?

--w------- 1 jaimew IT-GenericLinuxGroup 0 Sep 30 22:23 stu1

--w------- 1 jaimew IT-GenericLinuxGroup 0 Sep 30 22:23 stu2

1. Execute help set

1. Set the noclobber option on err.txt

1. Issue an ls –al redirected to err.txt. What was the output and why?

1. Remove the noclobber option from err.txt

1. Explain the --help option for a program.

1. Explain double quotes, single quotes and the accent

1. Using the **man** page describe what is output by the **env** command with no arguments.

1. Show a shell command that will add the current directory to the **PATH** (without removing any existing variables from the current value of **PATH**.)

1. Describe what you would have to do to make a change to the Shell permanent.

1. Explain how to make a Shell change permanent for all sessions including your current session. (i.e. how do I reload my current session without closing and reopening)

1. Capture the output from the **echo “Current time and date is `date`”** command.

1. Issue the **date** command and capture its output. Now, capture the output from the **echo 'Current time and date is `date`'** command. Note that the ` character is an accent NOT an apostrophe ' . Explain why the output is different in particular to the single and double quotes. Also explain what the ` character does.

1. Create a symbolic link called almost that links to the lab1 directory. Capture the output

1. Change to almost and capture the output.

1. Use "help" to get information on how to use the alias command.
   1. What information is provided in from “help”?
   2. When do should you use “help” compared to when you should use “man”?

1. Create an alias named LA that is ls –al. Capture the output and show it worked.

1. Capture the command to redirect your output from #17 to a file named date.txt.

1. Issue the more or less command on date.txt and capture the output.

1. Capture the long listing of date.txt.

1. Modify date.txt to add executable privileges to date.txt for the owner, Capture the command and proof that the permissions were changed. No other permissions will be changed. You must do this with the octal values.

1. Modify date.txt to remove w from the group. Capture the command and proof that the permissions were changed. No other permissions will be changed. You must do this without using the octal values.

1. Capture the command echo $SHELL.
   1. What shell are you using?
   2. Where do the “shells” live?
   3. Capture the command to switch to a different shell
   4. Capture the command echo $SHELL.
   5. What shell are you using? Why is the shell different than you expected?
   6. Capture the command to leave the different shell

**TO TURN IN:**

* A PDF file - Name this text file your last name, first letter of your first name lab2.pdf. This file will contain all your answers. I want the question copied and then the answer to the question below it.

* A zip file that contains your pdf, and all text and files created for this lab.

You zip will be named your last name first letter of your first name lab2.zip (example steinerslab2.zip)