CS 1428
Fall 2019
Gentry Atkinson
Lab 5

Introduction:

Many coders find that they have a much easier time using the Linux operating system, rather than Windows or Mac OS. This is because Linux offers its users many powerful command-line tools as well as many software suites which can easily be imported and installed. And it's all free.

Linux was first developed in 1991 as successor of Unix, which is an operating systems from the late 1970's. The C programming language was co-developed with Unix. This is one reason that C++ now works so well with Linux; they share a lineage. Linux has now become the OS of choice for most code development and networking.

Console commands can be more difficult to work with than Graphic User Interfaces but the console offers some major advantages. One of these is that you can do a lot with just a few lines of text. Anything on any computer can be created, destroyed, or altered from the command line assuming you have the proper privileges. A second major advantage of text commands is that they can easily be collected into files called shell scripts. These scripts allow you to automate many routine tasks.

The purpose of today's lab is to familiarize you with the basics of the Linux command line and simple shell scripts.

Directions:

1- Make sure you are seated at a computer with WinSCP. Launch WinSCP and log into **zeus.cs.txstate.edu** with your Texas State username and password.

2- You should see a small file tree. This is your home folder on Zeus. No other student has access to it. Launch a putty session with the icon on the toolbar of WinSCP.

3- You should see a black console screen. Your cursor will be on a line that says [your_name@zeus ~]$ or something like that. This is where you will type commands to control the system. Type the following command:

mkdir lab5

This will create a directory named lab5.

4- Type the command:

cd lab5

This will change your current directory to be lab5. This is similar to double clicking on a directory in your GUI to open it. You can use **cd ..** to return to your home directory if you like.

5- Take some time to experiment with the following commands:

cd	Change directory. Type the name of a directory after **cd** to open that directory or use **cd ..** to go "up" on level. **cd ~** will always return to your home folder.
mkdir	Make directory. Type the name of the new directory after
ls	List. This will show a list of files in your current directory. Try **ls -a** to show hidden files too.
man	Manual. Type the name of a command after **man** to learn its usage. Press **q** to get out of the man page.
echo	Prints some text on the command line. Type whatever you want after **echo.**
mv	Move. This relocates a file from one location to another. Moving a file into its same location can be used to rename it.
rm	Remove. This deletes a file whose name you type.
rmdir	Remove Directory. Deletes an **empty** directory. You can consult the manual page to see how to delete a non-empty directory but be careful! They don't come back!

6- Once you've tried out the above commands, *carefully* copy the following line to create your first shell script.

vim your_name_lab5.sh

7- You are now in the vim text editor and you're editing a file called "your_name_lab5.sh". Vim has two modes "command" and "insert". **Press i to enter insert mode.**

8- Carefully copy the following text:

#!/bin/sh
#Your Name
#CS1428 Fall 2019
#Lab 5
echo "Hello World"

9- Press **escape** to enter command mode. Type:

:wq

...to save your file and quit the text editor.

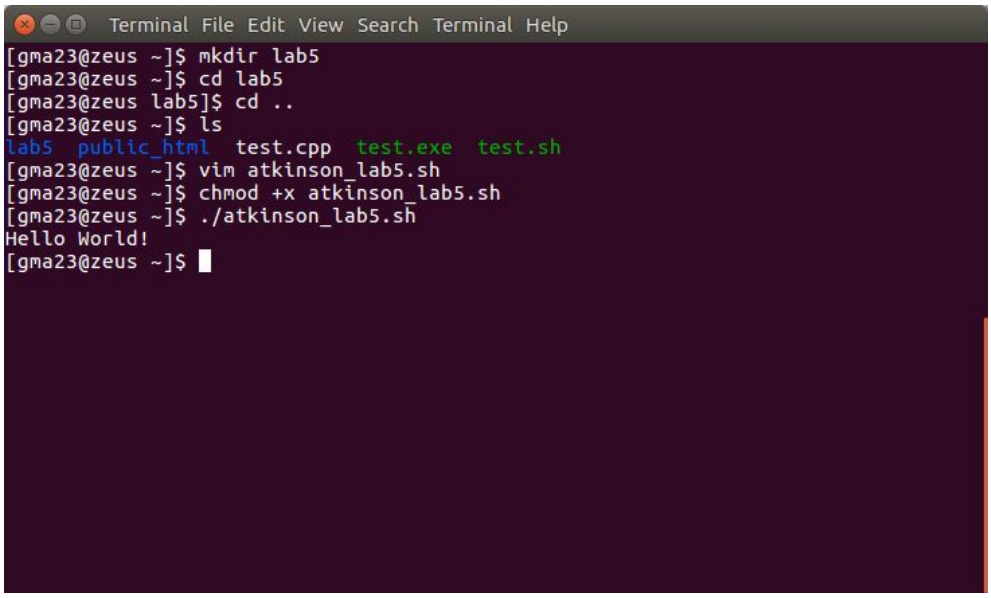
10- You have to explicitly tell the shell that your new file is executable before you can run it. Do this by copying the command:

chmod +x your_name_lab5.sh

11- To run your new script copy the command:

./your_name_lab5.sh

12- Your output should look something like this:



13- Use the WinSCP file system to drag your **your_name_lab5.sh** onto the desktop of you local machine. Disconnect from Zeus. Submit your script through TRACS. You can leave when you're done.