Geophysics 4133
Linux Introduction
J.R. Leeman

Name: _____

For each of the following problems neatly show all steps of your work (partial credit may be given if your work can be easily followed). Clearly indicate your final answers and answer all parts of the question including the 'describe' and 'why' questions.

In scientific computing we often use the LINUX operating system for its efficiency in computation and long standing support of open source code and programming. When you get to field camp you will be expected to be familiar with it was we will use it to download and process much of the data we collect.

First we need to go over some basic commands, we will use the Linux command line, which means all keyboard commands (no mouse!).

ls - lists the contents of a file
cp filename1 filename2 - copies the file to a new filenname
rm filename - removes the file
cd folder - change directory to a folder within the current directory
cd .. - take you back one directory folder
pwd - prints the current working directory

You are free to use whatever text editor you wish, but we'll focus on a editor called vi. emphvi filename opens a file in the vi editor, or creates the file if it does not exist

Vi has two modes: command mode and insert mode. When you open a file you are in command mode. Vi has a command set of it's own. To type text you must be in insert mode. Pressing escape a time or two will ensure you are back into command mode.

i - put editor into insert mode at the current location of the cursor
a - put editor into insert mode at the character after the cursor
o - put editor into insert mode at the beginning of a newly inserted line
:w - write (save) the file
:q - quit vi
:wq - writes the file and then quits vi
:q! - quit vi without writing the file

We often use C-shell scripts to automate tasks we do over and over (making seismograms, writing header data, etc). You'll work with a simple script I wrote for you in lab. To run a shell script you type *./filename.csh* at the command prompt.

1. Get the file off learn I posted. Put it in your home directory.
2. Open a command terminal. Type tcsh to ensure you are in the C-Shell.
3. Unzip the file. (We talked about this is class.)
4. Change directories to the directory that was created (use ls to see this new directory).
5. What all is in this directory? How are the seismic data files named?

6. Open the file example.csh. What do you think this file will do?

7. Change the permissions on the file so you have execute permissions.
8. Edit the file to use your name.
9. Edit the survey state from NV to CO.
10. Run the script.
11. What did the script do to your data files?

12. What else could you use a script to do in geophysics?

13. Copy the script to a file named *data_rename.csh*. What command did you use to accomplish this? (Write exactly what you typed.)

14. What is the path to your home directory?

15. Make a directory called 'My_Survey_Data'. What did you type to do this?

16. Copy the directory containing your script and data to this folder. What did you type to do this?

17. Now remove the directory. What did you type to do this?