ESCI7205 hw3

Name -

**Due Th., Sep. 22, 2011.**

0) Read Ch 3-6 of the book. (skip stuff on zsh, pico).

\* signifies that there is nothing to write down, this question only has activity on the computer. If there is no \*, then there is something to write down to hand in. You can type your answers into this word document. Make sure you put your name above.

1 ) [5] Using the man page, describe the output of the command

%*date –u –r 10*

Thu Jan 1 00:00:10 UTC 1970

(Cannot be done on SUN/Solaris.)

2) [5] Using the man page, describe the meaning of each of the columns output by the command

%*ps –afx*

3) [2] Where is the SAC program on the ceri mac lab system?

4) [4\*] Copy the script ExaminePath.sh from my home directory on the SUN (access it using ~rsmalley/ExaminePath.sh from the SUN or /gaia/alpaca/d1/rsmalley from the mac) . Run this script and redirect the output into a file named MyPath in your homework directory.

5) [5] Use the sort command to sort the output of ExaminePath.sh and redirect the output into a file MySortedPath in your homework directory. Use a pipe to do this and write down the command you used. Do not sort the file MyPath you made in #4.

6) [30] This question has both computer and written components.

A) Change into your homework directory.

B1) Create a file called NMSZ.catalog.nedit usingNEdit.

B2) Create a file in your homework directory called NMSZ.catalog.vim using vim.

C) Open the web browser Firefox and go to the CERI mainpage.

D) Click on the earthquake map and then click on the link “all earthquakes.”

E) Highlight the earthquake hypocenter list, and copy it into the clipboard of your web browser.

F1a) paste this list into your NEdit file.

F1b) Save the file.

F2a) paste this list into your vim file.

F2b) Save the file.

We will now prepare this file for use by GMT or some other typical program. First GMT does not handle the character hemisphere specification on the latitudes and longitudes. These must be removed. Next, western longitudes are negative [or between 180° and 360°], so we have to put a minus sign in front of them (with no space)[or add 180°] . We will also get rid of the first column, which were links in the USGS web page we used to obtain the data. Look at the format of the file to see if you can figure out why the changes are made in the order specified.

In NEdit

(Note: Global search and delete below means do the specified action [delete the longitude directional “W”] to the whole file – it does not mean search and delete all the “W”s.)

G) Global search and delete the longitude directional “W”. Do not do this by hand!

H) How did you do this?

I) Insert a negative sign (‐) before all of the event longitudes.

J) How did you do this?

K) Global search and delete the longitude directional “N”.

L) Remove the fist column with the word “map” (ignore case).

M) What commands did you use?

N) Save this file.

We will now redo this in vim.

N) Global search and delete the longitude directional “W”. Do not do this by hand!

O) How did you do this?

P) Insert a negative sign (‐) before all of the event longitudes.

Q) How did you do this?

R) Global search and delete the longitude directional “N”.

S) Remove the fist column with the word “map” (ignore case).

T) How did you do this?

U) Save this file.

7. Do the new hypocenter files accurately reflect the original information on the website?

If not, what is different and how could it be fixed?

Are the NEdit and vim versions of the file the same?

1) Write a shell script that takes a file name and a character string as argument, tests for the files existence, then reports if the file does not exist or the number of lines in the file with the character string. Use this script to look for the string “ARGENTINA” in the file ~rsmalley/geolfigs/samgps.dat on the SUN or /gaia/alpaca/d1/rsmalley/geolfigs from the mac. (If you are on the SUN you do not have to copy the file from my directory; you should be able to access it from your account. You may have to copy it if you are on the Mac – but I think not.)

The command to execute the shell script, and its possible outputs, will look something like this

%myscript ~rsmalley/geolfigs/samgps.dat ARGENTINA

the file ~rsmalley/geolfigs/samgps.dat does not exist

%

%myscript ~rsmalley/geolfigs/samgps.dat ARGENTINA

the file ~rsmalley/geolfigs/samgps.dat has 100 lines with the string (ARGENTINA)

%

Place the shell script in your homework directory with the name hw3.1.sh

8) a) Figure out and describe exactly what and how the following sed calls work. Use the file sed\_tst.dat to see what they two do.

sed 's/[^ ]\*/(&)/' < old > new

sed 's/[^ ][^ ]\*/(&)/g' < old > new

b) Explain how this command works. You will have to read the grep man page. Count the number of lines in the three files f1 f2 f3 that don't begin with a ”#”

sed 's/^#.\*//' f1 f2 f3 | grep -v '^$' | wc -l