

**Due Tue., Sep. 29, 2009.**

0) Read Ch 1-8 of the book for class on Sep 29. (skip stuff on zsh, pico). This is all review of material covered in class.

\* 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.

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/geofigs/samgps.dat`. (You do not have to copy the file from my directory; you should be able to access it from your account.)

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

```
%myscript ~rsmalley/geofigs/samgps.dat ARGENTINA
the file ~rsmalley/geofigs/samgps.dat does not exist
%
%myscript ~rsmalley/geofigs/samgps.dat ARGENTINA
the file ~rsmalley/geofigs/samgps.dat has 100 lines with the string (ARGENTINA)
%
```

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

2) Copy the script `~rsmalley/ESCI7205/HW/myfirstmap.sh` and the data file `~rsmalley/ESCI7205/HW/eqs.vim` to your homework directory. Also copy the file `~rsmalley/.gmtdefaults4` to either your homework directory or your home directory.

Using the class notes and the man pages for the programs used in the script, explain in detail what each line of the shell script does and what the options/flags/switches on the programs `pscoast` and `psxy` do.

Run the script (you should not have to make any changes). What is the name of the output file? Use the command "gs" to display the map you made.

3) A) Go to the web page - <http://earthquake.usgs.gov/regional/neic/> - and then to the [earthquake catalog search](#) link, select [rectangular area](#). On the page that opens select the options "screen file format", "USGS/NEIC (PDE) 1973-present", and put in a latitude and longitude range to cover the continental United States. Using the editor of your choice, cut and paste this information into a file in your homework directory.

B) Modify the script myfirstmap.sh (call it something else - don't erase the original) to make a map using the new data set from 3A. (This is the most common way to learn shell scripting - taking something that almost does exactly what you want/need and modifying it). You will have to modify the region plotted, the scale, and the input file handling as a minimum. Also, change the color of the earthquakes to red.