Programming Assignment 2
TCSS 142 Autumn 2014
Due: Friday, Dec. 5, 8 a.m.

Given the problem statement below, complete the following

- ✓ Program that compiles and runs correctly - no credit for programs that do NOT run
  - o You are to use modular approach
  - o No global variables
  - o You are to use parallel list structures
  - o Coding comments including function pre and postconditions, as well as the program header with your name and course info at the top of the file
  - o If some part of your code does not function properly, comment it out to show you attempted a solution

You are NOT allowed to help one another with this program or use somebody else's code – check the rules listed on the syllabus. However, you may seek help from CSS mentors and come to our office hours.

Problem statement

Even though the prediction of earthquakes remains an open problem, statistical analysis is one of the methods currently used to find recurrent patterns. You need to write a program that will read in the earthquake data, classify it according to its magnitude, and print a report to another file.

Input

All earthquake data is located in a file **earthquakes.txt**. we discussed during lectures.

Processing

Earthquakes are classified into categories, depending on their magnitude. Your program is to handle the following categories:

Class	**Magnitude**
Great	8 or more
Major	7 - 7.9
Strong	6 - 6.9
Moderate	5 - 5.9

Lists are to be used as parallel data structures containing the data:

- A list of region names, where none of the names is repeated
- A list for each earthquake category, where the data in these lists is to be parallel to the names list, namely, if name[0] contains Gulf of California, then great[0] is the number of "great" earthquakes that occurred in that region, major[0] is the number of "major" earthquakes that occurred in that region, etc.

Output

You are to write the following statistics to a csv file (a name of which will be entered at run time). Your statistics for this file and formatting should look as follows:

REGION	MODERATE	STRONG	MAJOR	GREAT	OVERALL
OFF THE EAST COAST OF HONSHU JAPAN	79	7	1	0	87
NEAR THE EAST COAST OF HONSHU JAPAN	91	19	1	1	112
BOUGAINVILLE REGION PAPUA NEW GUINEA	1	0	0	0	1
SOUTH SANDWICH ISLANDS REGION	2	1	0	0	3
GULF OF CALIFORNIA	2	0	0	0	2
NEW IRELAND REGION PAPUA NEW GUINEA	1	0	0	0	1

Once you write these statistics, you need to <u>append</u> additional information to a file **summary.txt**. This information is to contain the total number of earthquakes of magnitude >= 5 processed and the region/s with the highest number of earthquakes (there may be more than one region matching this max). For example:

TOTAL NUMBER OF EARTHQUAKES DURING THE PERIOD 2014/10/11-2014/10/18: 21

REGIONS WITH THE HIGHEST NUMBER OF EARTHQUAKES:
NEAR THE EAST COAST OF HONSHU JAPAN 112

Note: If you want to append to a file, use "a" instead of "w" when opening it.

Finally, when you are done writing to the second file, print a message to the screen: "Processing Complete"

Program Submission

If you want your assignment to be graded, it has to be compatible with our platform, namely Python 3.4.1 The source code is to be called `yourNetid_project2.py`

On or before the due date, use the link posted in Canvas next to Programming Assignment 2 to submit your code