CS:5110 Introduction to Informatics
Fall 2018
Final Project Description

Due Date: Thursday, **December 6, 2018 (before 3 pm**)

You are given a file of poems (Poems.txt) written by two different authors: Robert Frost and William Blake.

1. Follow the guidelines in the python stub file given to you (project.py) and code for the class specifications given as comments. Use your solution to solve the remaining problems.

2. Read in and process the file Poems.txt and create all appropriate instances as described in the class specifications.

3. Write a classmethod to identify the smallest poem (in number of lines excluding blank lines).

4. Write an __lt__ method to sort the poems on sentiment score

5. Write a function that takes a string as an input argument and checks to see if the string passes all of the following criteria.

    i) it's length is at least 7 and less than 10
    ii) it has at least one punctuation in it
    iii) it has at least 1 capital letter
    iv) and it occurs in at least 1 poem

If the string satisfies all these four criteria then return True otherwise, return False and give a reason for failure.

6. Write a **recursive** function **wordtrain** that builds the largest "word train" that is less than 100 characters in length starting with a single word given as input to the function. A word train is a sequence of words where the last letter of a word is the same as the first letter of the following word. You should add one space between two consecutive words.

As an example given **wordtrain**(engine) a result could be:

    engine evening God diverged down new way you undergrowth having…… etc……

Words selected for the wordtrain must occur in one of the poems given to you and also a word may not repeat in a wordtrain. There are no further criteria for word selection in the process of building a wordtrain. Note that the starting word may not occur in the poem. Test your function with different starting words.

If something is not clear please ask me.

You can make reasonable assumptions if needed, state them clearly at the top of your submission file in the comment section as designated. Run them by me if you wish.

I may give you some additional program files as helper functions. Use them as you see fit.

You may create any additional program files for use by your project.py. If you do, submit these as well.

You should be including meaningful comments in your program.

Submission Instructions:

Submit your completed project.py and any files that it uses to the ICON Dropbox setup for this project. Keep in mind that I should be able to run your program based on what you submit. Assume of course that I have access to NLTK. Upload a single tar/zip file containing all the files needed to run your project.py program.

If there are any special instructions for running your program, add them to the top level specifications in project.py