CECS 282 – Assignment 1

HAIKU-IZE

"**Haiku**" is a traditional form of Japanese poetry. **Haiku** poems consist of 3 lines. The first and last lines of a **Haiku** have 5 syllables and the middle line has 7 syllables.

Here are three examples of haiku poems from Matsuo Basho (1644-1694), considered the greatest haiku poet:

An old silent pond...
A frog jumps into the pond,
splash! Silence again.

Autumn moonlight-
a worm digs silently
into the chestnut.

In the twilight rain
these brilliant-hued hibiscus -
A lovely sunset.

PART A:

In this assignment, you will write a program (suggested name *haikuize.cpp*) to examine a line of English text and attempt to "haiku-ize" it. As mentioned above, haiku relies heavily on the number of syllables of a given English sentence. The following are guidelines to determine the number of syllables of a given word:

a. A word consists of a maximal string of alphabetic characters (upper and/or lower-case), followed by zero or more non-blank, non-alphabetic characters. NOTE: Upper/lower case distinctions and non-alphabetic characters are ignored for the purpose of counting syllables, but must be retained in the final output.

b. The characters 'A', 'E', 'I', 'O', 'U', 'Y' are vowels. Other alphabetic characters are consonants. EXCEPT: 'QU' is a single consonants and 'Y' is a consonants if immediately followed by one of the other vowels.

c. Every word has at least one syllable.

d. Each word of one or more consonants with at least one vowel to either side indicates a division into separate syllables. EXCEPT:

   i. An "E" appearing as the last alphabetic character in a word is silent and should be ignored unless the next-to-last alphabetic character is an "L" and the character immediately before that is another consonant. For example, "ale" and "pale" have one syllable. "able" has two.

   ii. An "ES" sequence at the end of the alphabetic sequence in a word does not add a syllable unless preceded by two or more consonants. For example, "ales" and "pales" have one syllable. "witches" and "verses" have two.

Input

You will create an input file named *sentences.txt*. Input to your program will consist of a series of lines of text consisting of a sequence of one or more words (as defined above) separated by single spaces. The total line length will not exceed 200 characters.

Output format

You will create an output file named *haiku.txt*.

If the words in a given input line can be divided into a haiku, then print the haiku as three lines of output.

• Each line should be left-justified.

• A single space should separate each pair of words within a line.

• Each word should appear exactly as it does in the input, preserving case and any terminal non-alphabetic characters.

• Do not split a word across multiple lines.

If the words in the input cannot be divided into a haiku, print the line of input with no changes.

Sample Input

An old silent pond … A frog jumps into the pond, splash! Silence again.

Programming is fun!

Sample Output

An old silent pond...
A frog jumps into the pond,
splash! Silence again.

Programming is fun!

PART B:

Use the given file *word.txt* (61000 words).
Write a program (suggested name *haikugenerator.cpp*) that randomly generates a "beautiful" haiku. For example,

international
amazing printer slowly
dead ham no more wine

NOTE:

- Please include the following block at the beginning of your program

```
/*
Name:
Class: CECS 282
Instructor: Minhthong Nguyen
Purpose of the program:
Last updated:
*/
```

- Comment your code.
- Follow standard style for coding.