CS 115 - Introduction to Programming in Python

Lab 03

Lab Objectives: Functions

Notes:

- You should not use lists, tuples, dictionaries in your solution.
- For each of the functions below, you should include a docstring comment. The docstring should have the following format:

```
"""Summary of what the function is for
Parameters:
param1 (param1 type): Description of param1

Returns:
type: variable/value

"""
```

1. The following will be in the script, `yourname_q1.py`:

   PART A (Problem Description):

   The soundex system encodes words into a letter followed by 3 numbers that describe(roughly) the sound of the word. Similar sounding words are encoded with the same 4-character codes. The (simplified) algorithm is as follows:

   a) Keep the first letter of the word.
   b) Delete all characters a,e,i,o,u,h,w,y.
   c) Assign numbers to the following characters according to the following:
      a. 1: b,f,p,v
      b. 2: c,g,j,k,q,s,x,z
      c. 3: d,t
      d. 4: l
      e. 5: m,n
      f. 6: r
   d) If two or more numbers are next to each other, delete all but the first.
   e) The encoded word is the first 4 letters of the resulting code. If there are fewer than 4 characters, the code should be padded with zeros.

   PART B:

   Your solution should make use of the following functions:

   a) `remove_letters()`: takes 2 strings as parameters, the first is the string to update, and the second is a string containing the set of letters to remove. The function should return a new string where all letters that appear in the given set of letters have been removed.
   b) `get_code()`: takes a character as a parameter, and returns the integer number representing the given character (see step c from part A). If the character is not one of the coded characters, return -1.
   c) `remove_duplicates()`: takes a string as a parameter, and for all (adjacent/side by side) repeating characters, keeps the first but removes the rest. For example, when passed the string '223455666772' returns '2345672'.
   d) `get_soundex()`: takes a word as a parameter and returns its soundex encoding according to the rules listed in part A. Return None if there are any non-alpha characters in the word (hint: isalpha)

PART C:

Write a program that inputs a word from the user and outputs its soundex encoding(or error messages) where appropriate.

For example:

'Robbert' -> R163

'cat' -> c300

'hello world' -> None

'carrot' ->c630

'Caret' -> C630