proj06: Functions and Lists

Part I:
Open proj06.py and proj06_test.py. You can test your functions by running the proj05_test file. This calls your functions in a separate file and prints out pass if the functions are working, and fail if they are not.

1. Create a function divisors(num) that returns the divisors of an integer stored in a list.

    Example:

    Calling divisors(8) should return [1, 2, 4, 8]. Therefore, if you write:

        print divisors(8)

    at the bottom of your program, the console should print:

        [1,2,4,8]

Hint: to find the divisors of number n, loop over every number from 1 to n (including n). If n divided by the current number has a remainder of 0, the current number is a divisor of n. To find the remainder, use %. Example: 8%1 == 0, but 8%3 == 2.

2. Create a function prime(num) that returns True if the number is prime, and returns False if the number is not prime. **Call the divisors function inside the prime function** to help you solve the problem!

    Example:

    Calling prime(8) should return True. Therefore, if you write:

        print prime(8)

    at the bottom of your program, the console should print:

        True

Hint: a number is prime if it only has two divisors – the number and itself.

Part II:
REVIEW: Conditionals, for loops, lists, and functions

#INSTRUCTIONS:

1. Make the string "sentence_string" into a list called "sentence_list" sentence_list should be a list of each letter in the string: ['H', 'e', 'l', 'l', 'o', ',', ' ', 'm', 'y', ' ', 'n', 'a', 'm', 'e', ' ', 'i', 's', ' ', 'M', 'o', 'n', 't', 'y', ' ', 'P', 'y', 't', 'h', 'o', 'n', '.']

Hint: Use a for loop and with an append function: list.append(letter)

sentence_string = **"Hello, my name is Monty Python."**

2. Print every item of sentence_list on a separate line using a for loop, like this:
H
e
l
l
o
,

m
y
 .... keeps going on from here.

3: Write a for loop that goes through each letter in the list *vowels*. If the current letter is 'b', print out the index of the current letter (should print out the number 1).

vowels = [**'a'**, **'b'**, **'i'**, **'o'**, **'u'**, **'y'**]

4: use the index found to change the list *vowels* so that the b is replaced with an e.

5: Loop through each letter in the sentence_string. For each letter, check to see if the number is in the *vowels* list. If the letter is in the *vowels* list, add one to a counter. Print out the counter at the end of the loop. This counter should show how many vowels are in *sentence_string*.

6: Make a new function called "vowelFinder" that will return a list of the vowels found in a list (no duplicates).The function's parameters should be "list" and "vowels."

 Example:
vowelList = vowelFinder(sentence_list, vowels)
print vowelList

<div align="center">['a', 'e', 'i', 'o', 'y']</div>