MORE PRACTICE WITH STRINGS
CS 121

Each of the following exercises asks you to write a function involving strings. Write your four functions in one Python file, which you will upload to Moodle for HW11. Your solutions are due at the beginning of class on Friday (March 11).

1. Write a function that counts how many times a substring occurs in a string. Your function header should be:

    ```
    def countOccurrences(mystr, sub):
    ```

    Your function should return the number of times that string `sub` occurs in string `mystr`, or `-1` if `sub` is not found in `mystr`. For example:

    ```
    countOccurrences("Mississippi", "ss") returns 2
    ```

2. Write a program that removes all occurrences of a string from another string. Your function header should be:

    ```
    def removeAll(mystr, sub):
    ```

    Your function should return a string. For example:

    ```
    removeAll("Mississippi", "ss") returns "Miiippi"
    ```

3. Write a function that converts a word to pig Latin. The procedure for converting a word to pig Latin is as follows:

    a. If the word begins with a consonant, then all letters before the initial vowel are moved to the end of the word, and then "ay" is added to the end. For example, "pig" becomes "igpay", and "glove" becomes "oveglay".

    b. If the word begins with a vowel, then add "yay" to the end. For example, "eat" becomes "eatyay".

    Your function header should be called `toPigLatin`, and it should return a string.

    (You may assume that every word contains at least one vowel.)

4. Write a function to that recognizes an email address. That is, write a function called `isEmailAddress` that accepts a string argument and returns `True` if the string is a properly-formatted email address, and `False` otherwise.

    The format of an email address is `local_part@domain`. For simplicity, we will assume that:

    -   `local_part` can be any string consisting of letters, numbers, and the characters in the string `"._-!+"`

    -   `domain` can be any string of letters, numbers, and the characters in the string `".-"`

    For example:

    ```
    isEmailAddress("cool-address!@mydomain.net") returns True
    ```

    ```
    isEmailAddress("me@domain@net") returns False
    ```

    ```
    isEmailAddress("notAnEmailAddress") returns False
    ```