Python for Informatics

Assignment 4

"Files, Lists, and Split"

Description:

1. Write a program that prompts the user for a filename. Open the file, and read it one line at a time. For each line split the line into a ***list*** of words called ***line_list***. For each word in the current ***line_list***, convert the word to lowercase and look to see if it is in a list called ***script_list*** (a list that is initially empty). If the word is not in ***script_list***, add it to the ***script_list***. Sort the ***script_list*** alphabetically.
2. Within the same program define a function called ***freq_count()***. This function accepts a ***str*** and a ***list*** of words as arguments. It traverses the ***list*** of words and searches each word and counts the occurrences of the substring ***str*** within each word. **Print each word *along with the number of substring occurrences found within the associated word.*** Please note that you are ***not*** counting the number of occurrences in the file!
3. Modify your program so that it accepts the ***filename*** and the substring ***str*** as input from the user. After reading the file to build and sort the ***script_list***, pass the ***script_list*** into the ***freq_count()*** function. ***Test your program with the romeo.txt file that comes as a text file resource with our textbook.***

Note: With step 2, you are printing each word, not just words with non-zero occurrences of the substring ***str***. As examples of what the substring search results would be, given the word "there" and a substring ***str*** of "th", the result would be 1, and the print result for that one word would be "there 1"; given the same word "there" and a substring ***str*** of "e", the result would be 2, and the print result for that one word would be "there 2"; and finally, given the same word "there" and a substring ***str*** of "z", the result would be 0, and the print result for that one word would be "there 0".

Deliverable:

Two files as attachments at our course shell assignment page. The first file should be a Python .py file with the specified functionality. The second file should be a screenshot image file (.png or .jpg) demonstrating the correct execution of your program with "romeo.txt" entered as the filename by the user. Please ensure that your full name is specified as a Python comment at the top of the .py file.

Submission Deadline:

Please see the course schedule in our syllabus for all assignment submission deadlines.