FCS CYCLE 58

Assignment 3

Due Date: 12 October, 12 AM

In this assignment, you will be tasked with writing a Python program that utilizes recursive functions. The program will begin by displaying a menu with four options:

1. Count Digits
2. Find Max
3. Count Tags
4. Exit

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Enter a choice:

The user will select one of the options by entering the corresponding number and the menu should repeatedly display until the user exits.

Choice 1: will prompt the user to enter an integer and then recursively count the number of digits in that integer.

Example 1: Input: 64 Output: 2

Example 2: Input: 252 Output: 3

Example 3: Input: 6 Output: 1

Choice 2: will prompt the user to enter a list of integers and then recursively find the maximum

value in the list (you cannot use the max function).

Example 1: Input: [13] Output: 13

Example 2: Input: [1, 6, -3, 1, 14, 9, 12, 24] Output: 24

Example 3: Input: [] Output: 0

Choice 3: Given a valid HTML code as a multiline string (hard code the variable or read an actual html file that would be a plus) and a tag, recursively count the occurrences of the tag in

the HTML code (the opening and closing tags are considered as one).

Example: Suppose the HTML code is as follows:

<html>
<head>
<title>My Website**</title>**
</head>
<body>
<h1>Welcome to my website!**</h1>**
** **Here you'll find information about me and my hobbies** **
<h2>Hobbies**</h2>**
<ul>
**
Playing guitar
**
**
Reading books
**
**
Traveling
**
**
Writing cool h1 tags
**
**
**
</body>
</html>

If the user enters "h1" as the tag, the program should recursively count the occurrences of the "h1" tag in the HTML code, which is 1. Similarly, if the user enters "li" as the tag, the program should recursively count the occurrences of the "li" tag, which is 4.
Note that the opening and closing tags are considered as one. In the example above, there is only one "h1" tag, even though there is both an opening and a closing tag.

Hint: you should get more familiar with the structure of an HTML code, and how opening tags and closing tags work.

Choice 4: will terminate the program.

Note: you can add extra parameters to the function for each choice.

Submission Steps:

1. Name your python file which includes your submission similar to the following assignment_03_Name_LastName

2. Push your file to the remote repository foundation-cs-python on GitHub
3. Finally open the assignment on GitHub and submit the link.
4. If you have any inquiry about the assignment or if there is something not clear about the steps feel free to contact me through **slack** or by **email**

Important Reminder!

The assignment should be the GitHub link, no files or replit links will be accepted for the submission and you will be treated as if you did not do the assignment
You cannot do well on the exams unless you do the assignment
YOURSELF! Do not Google the solution or chatgpt it.
This will not help you! It is your decision in the end, your responsibility.
You are allowed to lookup methods in python that might help you in your solution.