Python Assignment - [Iterators, Generators, List Comprehension, Map, Filter, Reduce and Lambda Functions]

1. Create a lambda function which takes two inputs X and Y and performs X power Y operation and returns the output. For Example: If X is 2 and Y is 3, then 2 power 3 = 2 * 2 * 2 = 8.
2. Write a list comprehension to find factorial of each numbers in a given list L if and only if the numbers are even. For Example: If L = [1,2,3,4] then output should be [2, 24].
3. Write a generator to get even numbers from 1 to infinity.
4. Write a simple generator which can give prime numbers from range 1 to 5000.
5. Create three functions as follows -
    1. def remove_vowels(string) - which will remove all vowels from the given string. For example if the string given is “aeiru”, then the return value should be ‘r’
    2. def remove_consonants(string) - which will remove all consonants from given string. For example, if the string given is “aeri”, then the return value should be ‘aei’.
    3. def caller -> This function should 2 parameters
        1. Function to call
        2. String argument

    This caller function should call the function passed as a parameter, by passing second parameter as the input for the function. Example: caller(remove_vowles, “aeiru”) should call remove_vowels function and should return ‘r’ as the output.
6. Write a function called is_unique. This function should take a string and should check whether all characters of the string is unique/not. Example: If the input string is “abcd”, all characters are unique, hence it should return True. Another example, if the string is “abaa”, then this function should return False.
    1. Create a List L of size 10 with random strings of length > 1.
    2. Write a python snippet to check is_unique nature for all elements of L. (Hint: Use map function)
    3. Apply filter function, to get only unique elements from L.
7. Write python script to add elements of list L using reduce() function.
8. Write python recursive function to perform multiplication of all elements of list L.
9. Create a function perform_n_calls(function, N), inside this function create another function caller which makes N calls to the function which is coming as a first parameter to perform_n_calls function. Create another py file and create a function console() which prints “TalentpY”. Now, your job is to import perform_n_calls and use it as a decorator to console function in order to print “TalentpY” N times, where N ranges from 1 to any. (Hint: Use decorator feature)
10. Write a generator which can give random values every time.

HTML Assignment

1. Create a static website with following pages
    1. Home Page
    2. Products Page
    3. Contact Us Page

Home Page:

A. Create a centered text with message “Our App”. This text should be surrounded by horizontal lines.
B. Followed by centered text, Provide a marquee saying “Welcome to our Web App”. This marquee should scroll from right to left of the page and speed should be very slow.
C. Background colour of this page should be “green”.
D. Followed by the marquee, this page should have a image and below the image, it should have 3 hyperlinks
    A. One for Homepage (which redirects to this same page)
    B. One for Products Page
    C. One for Contact us Page

Products Page:

A. Create a table which lists different products (Use your own idea on products and details)
B. Add background image for the page.
C. Use any google font to display the content.
D. This page also should have 3 hyperlinks
    A. One for Homepage
    B. One for Products Page
    C. One for Contact us Page

Contact Us Page:

A. Create a form which takes
    A. Username
    B. E-Mail
    C. Phone Number

Followed by a “Send Enquiry” button, once user clicks on it, it should alert the message “Thanks for your enquiry!”. Add your own creative ideas to make the look and feel of the UI more attractive!

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