Practice Set-1

Total No of Question: 21

Q1 Given a string, remove all the vowels and return the resultant string.

Example:

Input1 : programming
Output1 : prgrmmng

Input2 : dictionary
Output2 : dctnry

Q2. Given a list containing only 0,1 and 2, sort the list in ascending order (without using any inbuilt sort function)

Example:

Input1 : 1 1 0 0 2 0 1 2
Output1: 0 0 0 1 1 1 2 2

Input2 : 1 2 2 1 1 0 2 1
Output2: 0 1 1 1 1 2 2 2

Q3. Given a string, find all the duplicate characters which are similar to each others.

Example:

Input1 : hello
Output1 : l

Input2 : geeksforgeeeks
Output2 : e g k s

Reference Link:
https://www.geeksforgeeks.org/python-find-duplicate-characters-string/

Q4. Given an integer x, return true if x is a palindrome integer.

Hint: An integer is a palindrome when it reads the same backward as forward. For example, 121 is a palindrome while 123 is not.

Example :

Input1: x = 121
Output1: true

Explanation: 121 reads as 121 from left to right and from right to left.

Q5. Extract all the string characters which have an odd number of occurrences.

Example:

Input1 : test_str = 'geekforgeeks'

Output1 : ['r', 'o', 'f', 's']

Input2 : test_str = 'g'

Output2 : ['g']

Reference link:
https://www.geeksforgeeks.org/python-odd-frequency-characters/?ref=leftbar-rightbar

Q6- Given two strings s1 and s2, check the most occurring common alphabet between the two strings(i.e, count of the alphabet should be the same in both strings).

Examples:

Input1 - s1 = “aabbcsddaa” , s2 = “absbeaddawew”

output1 - b:2 , d:2

Q7 - You are given a list of string, find all the anagram pairs.

Hints: An anagram of a string is another string that contains the same characters, only the order of characters can be different.

Examples:

Input1 - [‘abc’,’mno’,’dca’,’onm’,’nmo’,’bac’,’cad’,’pqr’]

Output1 - [(‘abc’,’bac’),(‘dca’,’cad’),(pqr),(‘mno’,’onm’),(‘mno’,’nmo’),(‘onm’,’nmo’)]

Q8- Given 2 Strings check if one string is rotation of other string.

Example:

Input1- str1 = "ABACD"

str2 = "CDABA"

Output 1- YES

Reference Link:

https://www.geeksforgeeks.org/a-program-to-check-if-strings-are-rotations-of-each-other/

Q9- Given a list of strings, return a list containing reverse of all the strings.

Example:

Input1- ['geeks', 'for', 'geeks', 'is', 'best']

Output1- ['skeeg', 'rof', 'skeeg', 'si', 'tseb']

Reference Link-

https://www.geeksforgeeks.org/python-reverse-all-strings-in-string-list/?ref=leftbar-rightbar

Q10- Check whether the entered number is an Armstrong number or not.

Hint: A positive integer is called an Armstrong number of order n if

abcd… = a^n + b^n + c^n + d^n + …

Example:

Input- 153

Output- YES

Explanation:

In case of an Armstrong number of 3 digits, the sum of cubes of each digit is equal to the number itself. For example:

153 = 1^3+5^3+3^3=1 * 1 * 1 + 5 * 5 * 5 + 3 * 3 * 3

Input- 120

Output- NO

Reference Link-

https://www.programiz.com/python-programming/examples/armstrong-number

Q11: Given a list L, left rotate all the elements by d units.

Example:

input List =[1,2,3] d=1

output = [3,2,1]

Reference Link: Left Rotation | HackerRank

Q.12 Add two polynomials and display the result

Example:

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Input:  A[] = {5, 0, 10, 6}
        B[] = {1, 2, 4}
Output: sum[] = {6, 2, 14, 6}

The first input array represents "5 + 0x^1 + 10x^2 + 6x^3"
The second array represents "1 + 2x^1 + 4x^2"
And Output is "6 + 2x^1 + 14x^2 + 6x^3"
```

Reference Link Program to add two polynomials - GeeksforGeeks

Q13. We build a table of n rows (1-indexed). We start by writing 0 in the 1st row. Now in every subsequent row, we look at the previous row and replace each occurrence of 0 with 01, and each occurrence of 1 with 10.

Example:

For n = 3, the 1st row is 0, the 2nd row is 01, and the 3rd row is 0110.

Given two integer n and k, return the kth (1-indexed) symbol in the nth row of a table of n rows.

Link Reference -

https://leetcode.com/explore/featured/card/recursion-i/253/conclusion/1675/

Q14. Given an array of integers. Find the Inversion Count in the array. For an array, inversion count indicates how far (or close) the array is from being sorted. If array is already sorted then the inversion count is 0. If an array is sorted in the reverse order then the inversion count is the maximum.

Formally, two elements a[i] and a[j] form an inversion if a[i] > a[j] and i < j.

Example:

Input: N = 5, arr[] = {2, 4, 1, 3, 5}

Output: 3

Explanation: The sequence 2, 4, 1, 3, 5 has three inversions (2, 1), (4, 1), (4, 3).

Reference Link :

https://practice.geeksforgeeks.org/problems/inversion-of-array-1587115620/1

Q.15

As we know, Ishaan has a love for chocolates. He has bought a huge chocolate bar that contains N chocolate squares. Each of the squares has a tastiness level which is denoted by an array A[].

Ishaan can eat the first or the last square of the chocolate at once. Ishaan has a sister who loves chocolates too and she demands the last chocolate square. Now, Ishaan being greedy eats the more tasty square first.

Determine the tastiness level of the square which his sister gets.

Example

Input : arr[ ] = {5, 3, 1, 6, 9}

Output : 1

Explanation:

Initially: 5 3 1 6 9

In first step: 5 3 1 6

In Second step: 5 3 1

In Third step: 3 1

In Fourth step: 1

Return 1

Example

Input : arr[ ] = {5, 9, 2, 6}

Output : 2

Reference Link:https://practice.geeksforgeeks.org/problems/ishaan-loves-chocolates2156/1

Q.16

Given a sorted array of distinct integers and a target value, return the index if the target is found. If not, return the index where it would be if it were inserted in order.

Example

Input1: nums = [1,3,5,6], target = 5

Output1: 2

Input2: nums = [1,3,5,6], target = 2

Output2: 1

Input3: nums = [1,3,5,6], target = 7

Output3: 4

Reference Link:https://leetcode.com/problems/search-insert-position/

Q.17: We are given n arrays of any size which may have common elements, we need to combine all these arrays in such a way that each element should occurs only once and elements should be in sorted order?

Example:

Input : arr = [[1, 2, 2, 4, 3, 6],

[5, 1, 3, 4],

[9, 5, 7, 1],

[2, 4, 1, 3]]

Output : [1, 2, 3, 4, 5, 6, 7, 9]

Reference Link:
https://www.geeksforgeeks.org/set-update-python-union-n-arrays/amp/

Q18.Write a program for string slicing in Python to check if a string can become empty by recursive deletion.

Example:

Input : str = "GEEGEEKSKS", sub_str = "GEEKS"

Output : Yes

Explanation : In the string GEEGEEKSKS, we can first delete the substring GEEKS from position 4. The new string now becomes GEEKS. We can again delete substring GEEKS from position 1. Now the string becomes empty.

Reference Link:

https://www.geeksforgeeks.org/string-slicing-python-check-string-can-become-empty-recursive-deletion/?ref=rp

Q.19 Write a program to sort the values of the first list using the second list.

Example:

Input : list1 = ["a", "b", "c", "d", "e", "f", "g", "h", "i"]

list2 = [0, 1, 1, 0, 1, 2, 2, 0, 1]

Output :['a', 'd', 'h', 'b', 'c', 'e', 'i', 'f', 'g']

Explanation : Here first the lowest value is checked. Like in this list, 0 is the lowest, so starting from the first index, 0 is the lowest and it is at index 0. So the value of index 0 is stored at index 0 in the first list. Similarly, 0 is again found at index 3 and so the value of index 3 in the first list is index 1. The same goes until the list is not completed.

Reference Link:

https://www.geeksforgeeks.org/python-sort-values-first-list-using-second-list/

Q.20.Given an array nums. Define a running sum of an array as runningSum[i] = sum(nums[0]…nums[i]).Write a function runningsum() and Return the running sum of nums.

Example :

Input1: nums = [1,2,3,4]

Output1: [1,3,6,10]

Explanation: Running sum is obtained as follows: [1, 1+2, 1+2+3, 1+2+3+4].

Input: nums = [1,1,1,1,1]
Output: [1,2,3,4,5]

Explanation: Running sum is obtained as follows: [1, 1+1, 1+1+1, 1+1+1+1, 1+1+1+1+1].

Reference Link: https://leetcode.com/problems/running-sum-of-1d-array/

21.Given two arrays of integers numbers and index. Your task is to create target array under the following rules:

i) Initially target array is empty.

ii)From left to right read nums[i] and index[i], insert at index index[i] the value nums[i] in target array.

Repeat the previous step until there are no elements to read in nums and index.
Return the target array.

It is guaranteed that the insertion operations will be valid.

Example 1:

Input: nums = [0,1,2,3,4], index = [0,1,2,2,1]
Output: [0,4,1,3,2]

Explanation:

nums	index	target
0	0	[0]
1	1	[0,1]

2	2	[0,1,2]
3	2	[0,1,3,2]
4	1	[0,4,1,3,2]

Example 2:
Input: nums = [1,2,3,4,0], index = [0,1,2,3,0]
Output: [0,1,2,3,4]

Explanation:

nums	index	target
1	0	[1]
2	1	[1,2]
3	2	[1,2,3]
4	3	[1,2,3,4]
0	0	[0,1,2,3,4]

Reference Link:
https://leetcode.com/problems/create-target-array-in-the-given-order/