CS23336-Introduction to Python Programming

Started on	Saturday, 9 November 2024, 5:56 PM
State	Finished
Completed on	Saturday, 9 November 2024, 7:30 PM
Time taken	1 hour 34 mins
Marks	10.00/10.00
Grade	**100.00** out of 100.00

Question 1

Correct
Mark 1.00 out of 1.00
Flag question

Question text

String should contain only the words are not palindrome.

Sample Input 1

Malayalam is my mother tongue

Sample Output 1

is my mother tongue

Answer:(penalty regime: 0 %)

```
def isPalindrome(word):
    i=0
    j=len(word)-1
    while i<j:
        if word[i]!=word[j]:
            return False
        i+=1
        j-=1
    return True
words=input().lower().split(" ")
for word in words:
    if not isPalindrome(word):
        print(word,end=" ")
```

Feedback

Input	Expected	Got
`Malayalam is my mother tongue`	`is my mother tongue`	`is my mother tongue`

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 2

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Given an array of integers `nums` which is sorted in ascending order, and an integer `target`, write a function to search `target` in `nums`. If `target` exists, then return its index. Otherwise, return `-1`.

You must write an algorithm with `O(log n)` runtime complexity.

Example 1:

```
Input: nums = [-1,0,3,5,9,12], target = 9
Output: 4
Explanation: 9 exists in nums and its index is 4
```

Example 2:

```
Input: nums = [-1,0,3,5,9,12], target = 2
Output: -1
Explanation: 2 does not exist in nums so return -1
```

Constraints:

- `1 <= nums.length <= 10`^{4}
- `-10`^{4} `< nums[i], target < 10`^{4}
- All the integers in `nums` are **unique**.
- `nums` is sorted in ascending order.

For example:

Test	Result
`print(search([-1,0,3,5,9,12],9))`	4

Answer:(penalty regime: 0 %)

Reset answer

```
def search(nums,target):
    l,r=0,len(nums)-1
    while l<=r:
        m=l+(r-l)//2
        if nums[m]==target:
            return m
        elif nums[m]<target:
            l=m+1
        else:
            r=m-1
    return -1

```

Feedback

Test	Expected	Got
`print(search([-1,0,3,5,9,12],9))`	4	4
`print(search([-1,0,3,5,9,12],2))`	-1	-1

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 3

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Given an list, find peak element in it. A peak element is an element that is greater than its neighbors.

An element a[i] is a peak element if

A[i-1] <= A[i] >=a[i+1] for middle elements. [0<i<n-1]

A[i-1] <= A[i] for last element [i=n-1]

A[i]>=A[i+1] for first element [i=0]

Input Format

The first line contains a single integer n , the length of A .
The second line contains n space-separated integers,A[i].

Output Format

Print peak numbers separated by space.

Sample Input

5

8 9 10 2 6

Sample Output

```
10 6
```

For example:

Input	Result
4 12 3 6 8	12 8

Answer:(penalty regime: 0 %)

```
def find(n,arr):
    peaks=[]
    for i in range(n):
        if i==0:
            if n==1 or arr[i]>=arr[i+1]:
                peaks.append(arr[i])
        elif i==n-1:
                if arr[i]>=arr[i-1]:
                    peaks.append(arr[i])
        else:
                if arr[i]>=arr[i-1] and arr[i]>=arr[i+1]:
                    peaks.append(arr[i])
    return peaks
n=int(input())
arr=list(map(int,input().split()))
peaks=find(n,arr)
print(" ".join(map(str,peaks)))
```

Feedback

Input	Expected	Got
7 15 7 10 8 9 4 6	15 10 9 6	15 10 9 6
4 12 3 6 8	12 8	12 8

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 4

Correct
Mark 1.00 out of 1.00
Flag question

Question text

You are given an `m x n` integer matrix `matrix` with the following two properties:

- Each row is sorted in non-decreasing order.
- The first integer of each row is greater than the last integer of the previous row.

Given an integer `target`, return `True` *if* `target` *is in* `matrix` *or* `False` *otherwise*.

You must write a solution in `O(log(m * n))` time complexity.

Example 1:

```
Input: matrix = [[1,3,5,7],[10,11,16,20],[23,30,34,60]], target = 3
Output: True
```

Example 2:

```
Input: matrix = [[1,3,5,7],[10,11,16,20],[23,30,34,60]], target = 13
Output: False
```

For example:

Test	Result
`print(searchMatrix([[1,3,5,7],[10,11,16,20],[23,30,34,60]], 13))`	`False`
`print(searchMatrix([[1,3,5,7],[10,11,16,20],[23,30,34,60]], 3))`	`True`

Answer:(penalty regime: 0 %)

Reset answer

```
def searchMatrix(m,t):
    if not m or not m[0]:
        return False
    r,c=len(m),len(m[0])
    l,r=0,r*c-1
    while l<=r:
        mid=(l+r)//2
        mid1=m[mid//c][mid%c]
        if mid1==t:
            return True
        elif mid1<t:
            l=mid+1
        else:
            r=mid-1
    return False
```

Feedback

Test	Expected	Got
`print(searchMatrix([[1,3,5,7],[10,11,16,20],[23,30,34,60]], 13))`	`False`	`False`
`print(searchMatrix([[1,3,5,7],[10,11,16,20],[23,30,34,60]], 3))`	`True`	`True`

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 5

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Given an array `nums` containing `n` distinct numbers in the range `[0, n]`, return *the only number in the range that is missing from the array.*

Example 1:

```
Input: nums = [3,0,1]
Output: 2
Explanation: n = 3 since there are 3 numbers, so all numbers are in the range [0,3]. 2 is the missing number in the range since it does not appear in nums.
```

Example 2:

```
Input: nums = [0,1]
Output: 2
Explanation: n = 2 since there are 2 numbers, so all numbers are in the range [0,2]. 2 is the missing number in the range since it does not appear in nums.
```

Example 3:

```
Input: nums = [9,6,4,2,3,5,7,0,1]
Output: 8
Explanation: n = 9 since there are 9 numbers, so all numbers are in the range [0,9]. 8 is the missing number in the range since it does not appear in nums.
```

For example:

Test	Result
`print(missingNumber([3,0,1]))`	2
`print(missingNumber([0,1]))`	2

Answer:(penalty regime: 0 %)

Reset answer

```python
def missingNumber(nums):
    n=len(nums)
    s=n*(n+1)//2
    s1=sum(nums)
    return s-s1
```

Feedback

Test	Expected	Got
`print(missingNumber([3,0,1]))`	2	2
`print(missingNumber([0,1]))`	2	2
`print(missingNumber([9,6,4,2,3,5,7,0,1]))`	8	8

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 6

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Balanced strings are those that have an equal quantity of 'L' and 'R' characters.

Given a balanced string s, split it in the maximum amount of balanced strings.

Return the maximum amount of split balanced strings.

Example 1:

Input:

RLRRLLRLRL

Output:

4

Explanation: s can be split into "RL", "RRLL", "RL", "RL", each substring contains same number of 'L' and 'R'.

Example 2:

Input:

RLLLLRRRLR

Output:

3

Explanation: s can be split into "RL", "LLLRRR", "LR", each substring contains same number of 'L' and 'R'.

Example 3:

Input:

LLLLRRRR

Output:

1

Explanation: s can be split into "LLLLRRRR".

Constraints:

1 <= s.length <= 1000

s[i] is either 'L' or 'R'.

s is a balanced string.

For example:

Test	Result
`print(BalancedStrings('RLRRLLRLRL'))`	4
`print(BalancedStrings('RLLLLRRRLR'))`	3

Answer:(penalty regime: 0 %)

Reset answer

```python
def BalancedStrings(s):
    b=0
    c=0
    for char in s:
        if char=='L':
            b+=1
        else:
            b-=1
        if b==0:
            c+=1
    return c
```

Feedback

Test	Expected	Got
`print(BalancedStrings('RLRRLLRLRL'))`	4	4
`print(BalancedStrings('RLLLLRRRLR'))`	3	3

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 7

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Write a Python program for binary search.

For example:

Input	Result
1,2,3,5,8 6	False
3,5,9,45,42 42	True

Answer:(penalty regime: 0 %)

```python
def search(arr,t):
    arr.sort()
    l,r=0,len(arr)-1
    while l<=r:
        m=(l+r)//2
        if arr[m]==t:
            return True
        elif arr[m]<t:
            l=m+1
        else:
            r=m-1
    return False
arr=list(map(int,input().split(',')))
t=int(input())
print(search(arr,t))
```

Feedback

Input	Expected	Got
1,2,3,5,8 6	False	False
3,5,9,45,42 42	True	True
52,45,89,43,11 11	True	True

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 8

Correct
Mark 1.00 out of 1.00
Flag question

Question text

An list contains N numbers and you want to determine whether two of the numbers sum to a given number K. For example, if the input is 8, 4, 1, 6 and K is 10, the answer is yes (4 and 6). A number may be used twice.

Input Format

The first line contains a single integer n , the length of list

The second line contains n space-separated integers, list[i].

The third line contains integer k.

Output Format

Print Yes or No.

Sample Input

7

0 1 2 4 6 5 3

1

Sample Output

Yes

For example:

Input	Result

5
8 9 12 15 3
11
	Yes

6
2 9 21 32 43 43 1
4
	No

Answer:(penalty regime: 0 %)

```python
def fun(n,arr,k):
    seen=set()
    for num in arr:
        if (k-num)in seen:
            return "Yes"
        seen.add(num)
    return "No"
n=int(input())
arr=list(map(int,input().split()))
k=int(input())
print(fun(n,arr,k))
```

Feedback

Input	Expected	Got

5
8 9 12 15 3
11
	Yes	Yes

6
2 9 21 32 43 43 1
4
	No	No

6
13 42 31 4 8 9
17
	Yes	Yes

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 9

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Two string values S1, S2 are passed as the input. The program must print first N characters present in S1 which are also present in S2.

Input Format:

The first line contains S1.
The second line contains S2.
The third line contains N.

Output Format:

The first line contains the N characters present in S1 which are also present in S2.

Boundary Conditions:

2 <= N <= 10
2 <= Length of S1, S2 <= 1000

Example Input/Output 1:

Input:

abcbde
cdefghbb
3

Output:

bcd

Note:

b occurs twice in common but must be printed only once.

Answer:(penalty regime: 0 %)

```
def fun(a,b,n):
    res=[]
    seen=set()
    for char in a:
        if char in b and char not in seen:
            res.append(char)
            seen.add(char)
        if len(res)==n:
            break
    return ''   .join(res)
a=input()
b=input()
n=int(input())
print(fun(a,b,n))
```

Feedback

Input	Expected	Got
abcbde cdefghbb 3	bcd	bcd

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 10

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Given two Strings s1 and s2, remove all the characters from s1 which is present in s2.

Constraints

1<= string length <= 200

Sample Input 1

experience

enc

Sample Output 1

xpri

Answer:(penalty regime: 0 %)

```
def remove(s1,s2):
    res=''.join([char for char in s1 if char not in s2])
    return res
s1=input()
s2=input()
print(remove(s1,s2))
```

Feedback

Input	Expected	Got
experience enc	xpri	xpri

Passed all tests!

Correct

Marks for this submission: 1.00/1.00.

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