

CS23336-Introduction to Python Programming

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State Finished

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Time taken 31 mins 46 secs

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

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 %)

```
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 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:

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

For example:

Test	Result
<code>print(search([-1,0,3,5,9,12],9))</code>	<code>4</code>

Answer:(penalty regime: 0 %)

```
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
```

Reset answer

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

You are given an $m \times n$ 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:

1	3	5	7
10	11	16	20
23	30	34	60

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

Output: `True`

Example 2:

1	3	5	7
10	11	16	20
23	30	34	60

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 %)

```
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:
```

Reset answer

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 4

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 %)

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

Reset answer

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 5

Correct

Mark 1.00 out of 1.00

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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 %)

```
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 6

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(s1,s2,n):
    res=[]
    seen=set()
    for char in s1:
        if char in s2 and
char not in seen:

res.append(char)
    seen.add(char)
    if len(res)==n:
        break
    return ''.join(res)
s1=input()
s2=input()
n=int(input())
print(fun(s1,s2,n))
```

Feedback

Input Expected Got

abcbde
cdefghbb bcd bcd
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

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:
RLRRLRLRL

Output:

4

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

Example 2:

Input:
RLLLLRRRLR

Output:

3

Explanation: s can be split into "RL", "LLLR", "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('RLRRLRLRL'))	4
print(BalancedStrings('RLLLLRRRLR'))	3

Answer:(penalty regime: 0 %)

```
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
```

Reset answer

Feedback

Test	Expected Got
print(BalancedStrings('RLRRLRLRL')) 4	4
print(BalancedStrings('RLLLLRRRLR')) 3	3

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

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]:
```

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 9

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 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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