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CS23336-Introduction to Python Programming

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State	Finished
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Time taken	40 mins 12 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

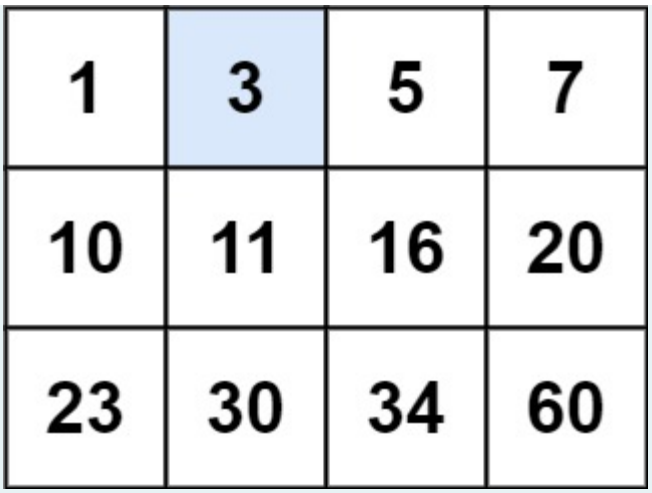
You are given an `m x n` integer matrix `matrix` with the following two properties:

- 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*.

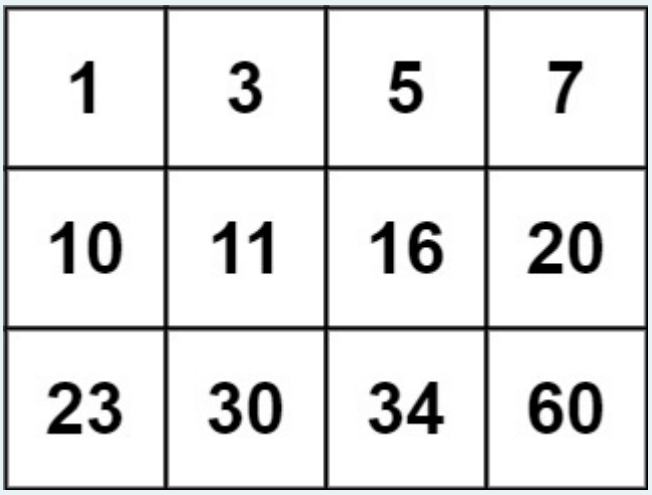
You must write a solution in `O(log(m * n))` time complexity.

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`

Test	Result
`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: list[list[int]], target: int) -> bool:
    for i in range(len(m)):
        for j in range(len(m)):
            if m[i][j]==target:
                return True
    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 2

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 %)

```
a=input()
b=input()
c=int(input())
d=""
count=0
for i in a:
    if count>=c:
        break
    if i in b and i not in d:
        d+=i
        count+=1
print(d)
```

Feedback

	Input	Expected	Got	
	abcbde cdefghbb 3	bcd	bcd	

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

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 %)

```
1
2
3
4
5
6
7
```

```
a=input().split(' ')
```

```
c=""
for i in a:
    i=i.lower()
    if i!=i[::-1]:
        c+=i+" "
print(c)
```

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 4

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 <= 10⁴`
- `-10⁴ < nums[i], target < 10⁴`
- 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(n: list[int], t: int) -> int:
    count=0
    flag=0
    for i in range(len(n)):
        if n[i]==t:
            count=i
            flag=1
            break
    if flag==1:
        return count
```

```
    else:
        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 5

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]

```
1
2
```

```
3
4
5
6
7
8
9
```

```
def BalancedStrings(s,l=0,r=0,count=0):
    for i in s:
        if i=='L':
            l+=1
        elif i=='R':
            r+=1
        if l==r:
            count+=1
    return count
```

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 6

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 %)

```
1
2
3
4
```

```
                                                    5
                                                6
                                                7
                                                8
                                                    9
                                                   10
                                                   11
                                                12
                                                   13
                                                14
                                                   15
```

```
a=int(input())
p=input()
b=list(map(int,p.split()))
count=0
c=int(input())
for i in range(len(b)):
    for j in range(i+1,len(b)):
        if(b[i]+b[j])==c:
            print("Yes")
            count=1
            break
    if count==1:
        break
if count==0:
    print("No")
```

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 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 %)

```
a=list(map(int,input().split(',')))
```

```
b=int(input())
c=0
flag=0
d=len(a)
a.sort()
while c<d:
    p=(c+d)//2
    if a[p]==b:
        print("True")
        flag=1
        break
    elif b<a[p]:
        d=p
    else:
        c=p+1
if flag==0:
    print("False")
```

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

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 %)

```
                                                    1
                                                    2
                                                    3
                                                    4
                                                5
                                                6
                                                    7
                                                8
```

```
                                                    9
                                                10
                                                    11
                                                    12
                                                13
                                                    14
                                                    15
                                                    16
                                                    17
```

```
a=int(input())
b=list(map(int,input().split()))
c=[]
d=len(b)-1
if a>1:
    if b[0]>b[1]:
        c.append(b[0])
    if b[d]>b[d-1]:
        c.append(b[d])
for i in range(1,d-1):
    m=i-1
    n=i+1
    if b[i]>b[m] and b[i]>b[n]:
        c.append(b[i])
c.sort(reverse=True)
print(*c)
```

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

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]

```

```

1

```
2
3
4
5
6
7
8
9
10
11
12
13
14
15
```

```
def missingNumber(n):
    count=0
    flag=0
    p=len(n)-1
    for i in range(p):
        count+=1
        if count not in n:
            flag=1
        if flag==1:
            break
    if flag==1:
        return count
    else:
        return n[p]+1
```

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 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 %)

```
a=input()
b=input()
c=""
for i in a:
    if i not in b:
        c+=i
```

```
print(c)
```

Feedback

	Input	Expected	Got	
	experience enc	xpri	xpri	

Passed all tests!

Correct

Marks for this submission: 1.00/1.00.

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