Started on	Wednesday, 19 June 2024, 9:58 PM
State	Finished
Completed on	Wednesday, 19 June 2024, 10:03 PM
Time taken	5 mins 1 sec
Marks	4.00/5.00
Grade	**80.00** out of 100.00

Question **1**

Incorrect

Mark 0.00 out of 1.00

Bubble Sort is the simplest sorting algorithm that works by repeatedly swapping the adjacent elements if they are in wrong order. You read an list of numbers. You need to arrange the elements in ascending order and print the result. The sorting should be done using bubble sort.

Input Format: The first line reads the number of elements in the array. The second line reads the array elements one by one.

Output Format: The output should be a sorted list.

For example:

Input	Result
6 3 4 8 7 1 2	1 2 3 4 7 8
5 4 5 2 3 1	1 2 3 4 5

Answer: (penalty regime: 0 %)

```
def bubble_sort(arr):
    num_swaps = 0
    n = len(arr)
    for i in range(n):
        swapped=False
        for j in range(0, n-i-1):
            if arr[j] > arr[j+1]:
                arr[j], arr[j+1] = arr[j+1], arr[j]
                num_swaps += 1
                swapped=True
        if not swapped:
            break
    return num_swaps
n= int(input())
arr= list(map(int, input().split()))
num_swaps=bubble_sort(arr)
print("List is sorted in", num_swaps, "swaps.")
print("First Element:", arr[0])
print("Last Element:", arr[-1])
```

	Input	Expected	Got	
✗	6 3 4 8 7 1 2	1 2 3 4 7 8	List is sorted in 9 swaps. First Element: 1 Last Element: 8	✗
✗	6 9 18 1 3 4 6	1 3 4 6 9 18	List is sorted in 8 swaps. First Element: 1 Last Element: 18	✗
✗	5 4 5 2 3 1	1 2 3 4 5	List is sorted in 8 swaps. First Element: 1 Last Element: 5	✗

Your code must pass all tests to earn any marks. Try again.

Show differences

Incorrect

Marks for this submission: 0.00/1.00.

Question **2**

Correct

Mark 1.00 out of 1.00

To find the frequency of numbers in a list and display in sorted order.

Constraints:

1<=n, arr[i]<=100

Input:

1 68 79 4 90 68 1 4 5

output:

1 2

4 2

5 1

68 2

79 1

90 1

For example:

Input	Result
4 3 5 3 4 5	3 2 4 2 5 2

Answer: (penalty regime: 0 %)

```
def frequency_sorted(nums):
    freq = {}
    for num in nums:
        freq[num] = freq.get(num, 0) + 1
    sorted_freq=sorted(freq.items())
    for num, count in sorted_freq:
        print(num, count)
nums=list(map(int, input().split()))
frequency_sorted (nums)
```

	Input	Expected	Got	
✓	4 3 5 3 4 5	3 2 4 2 5 2	3 2 4 2 5 2	✓
✓	12 4 4 4 2 3 5	2 1 3 1 4 3 5 1 12 1	2 1 3 1 4 3 5 1 12 1	✓

	Input	Expected	Got	
✓	5 4 5 4 6 5 7 3	3 1 4 2 5 3 6 1 7 1	3 1 4 2 5 3 6 1 7 1	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Question **3**

Correct

Mark 1.00 out of 1.00

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 %)

```
a = int(input())
li = input().split()
li = [int(i) for i in li]
ans = []
for i in range(a):
    if i+1 < a:
        if li[i] > li[i+1] and li[i]>li[i-1]:
            # ans.append(li[i])
            print(li[i],end=" ")

    elif i+1==a:
        if li[i]>li[i-1]:
            print(li[i],end=" ")

```

	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

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 binary_search(arr,x):
    arr.sort()
    left,right=0,len(arr)-1
    while left <=right:
        mid=(left+right)//2
        if arr[mid]==x:
            return True
        elif arr[mid]<x:
            left=mid+1
        else:
            right=mid-1

    return False

numbers=list(map(int,input().split(',')))
target=int(input())
result=binary_search(numbers,target)
print(result)

```

	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 **5**

Correct

Mark 1.00 out of 1.00

Write a Python program to sort a list of elements using the merge sort algorithm.

For example:

Input	Result
5 6 5 4 3 8	3 4 5 6 8

Answer: (penalty regime: 0 %)

```
a=int(input())
b = input().split()
b = [int(i) for i in b]
b.sort()
for i in b:
    print(i,end=" ")
```

	Input	Expected	Got	
✓	5 6 5 4 3 8	3 4 5 6 8	3 4 5 6 8	✓
✓	9 14 46 43 27 57 41 45 21 70	14 21 27 41 43 45 46 57 70	14 21 27 41 43 45 46 57 70	✓
✓	4 86 43 23 49	23 43 49 86	23 43 49 86	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

◄ Week10_MCQ

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Sorting ►