Dashboard / My courses / CD19411-PPD-2022 / WEEK_05-Lists / WEEK-05_CODING

Started on	Wednesday, 27 March 2024, 7:50 PM
State	Finished
Completed on	Tuesday, 9 April 2024, 9:42 PM
Time taken	13 days 1 hour
Marks	5.00/5.00
Grade	**50.00** out of 50.00 (**100**%)
Name	ABHIGNYA P 2022-CSD-A

Question **1**

Correct

Mark 1.00 out of 1.00

An array is monotonic if it is either **monotone increasing** or **monotone decreasing**.

An array A is monotone increasing if for all i <= j, **A[i] <= A[j]**. An array A is monotone decreasing if for all i <= j, **A[i] >= A[j]**.

Write a program if n array is monotonic or not. Print "True" if is monotonic or "False" if it is not. Array can be monotone increasing or decreasing.

Input Format:

First line n-get number of elements

Next n Lines is the array of elements

Output Format:

True ,if array is monotone increasing or decreasing.

otherwise False is printed

Sample Input1

4

5

6

7

8

Sample Output1

True

Sample Input2

4

6

5

4

3

Sample Output2

True

Sample Input 3

4

6

7

 8

 7

Sample Output3

False

For example:

Input	Result
4 6 5 4 3	True

Answer: (penalty regime: 0 %)

```
1  def is_monotonic(arr):
2      increasing=decreasing=True
```

```
 3
 4      #check if the array is monotonic increasing
 5 ▾    for i in range (len(arr)-1):
 6 ▾        if arr[i]>arr[i+1]:
 7              increasing=False
 8
 9      #check if the array is monotonic drecreasing
10 ▾    for i in range(len(arr)-1):
11 ▾        if arr[i]<arr[i+1]:
12              decreasing=False
13
14      #if either increasing or decreasing is true, array is monotonic
15      return increasing or decreasing
16
17  #input
18  n=int(input())
19  arr=[int(input()) for _ in range(n)]
20
21  #output
22  print(is_monotonic(arr))
```

	Input	Expected	Got	
✔	4 6 5 4 3	True	True	✔
✔	4 3 5 7 9	True	True	✔
✔	4 1 6 9 2	False	False	✔
✔	4 9 6 4 2	True	True	✔
✔	3 2 1 4	False	False	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Question **2**

Correct

Mark 1.00 out of 1.00

Consider the following program statement:

One needs to first input a set of N number of ALPHABETIC Strings each representing a name of a student in an array studname [N]. Assume each string can be Max. 40 Character Long. Subsequently, one needs to input Marks obtained by those students in another array marks [N]. Assume that studname[I] i.e. ith student in the list of student names has obtained Marks [I] in the Marks List. You need to find out and print the Max Marks obtained by a student and also print the name of the student who has obtained this marks. Considering here both the arrays of size 5. Complete the program by filling up required code in editable section.

Sample Test Cases

Test Case 1

 Input

 Amit

Bratin

Sandip

Sundar

Patrick

34

48

23

16

45

Output

 48

Bratin

Test Case 2

 Input

 Amit

Bratin

Sandip

Sundar

Patrick

49

48

34

23

45

Output

 49

Amit

For example:

Input	Result
Amit Bratin Sandip Sundar Patrick 89 90 45 67 82	90 Bratin

Answer: (penalty regime: 0 %)

```
1  name=[]
2  for i in range(5):
3      name.append(input())
4  marks=[]
5  for i in range(5):
6      marks.append(int(input()))
7  max=0
8  count=-1
9  for ele in marks:
10     count+=1
11     if(ele>max):
12         index=count
13         max=ele
14
15
16 print(max,name[index],sep="\n")
```

	Input	Expected	Got	
✔	Amit Bratin Sandip Sundar Patrick 89 90 45 67 82	90 Bratin	90 Bratin	✔
✔	Amit Bratin Sandip Sundar Patrick 34 48 23 16 45	48 Bratin	48 Bratin	✔
✔	Amit Bratin Sandip Sundar Patrick 49 48 34 23 45	49 Amit	49 Amit	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Question **3**

Correct

Mark 1.00 out of 1.00

You have to generate the sum of specific numbers based on its position in the array set provided to you.

This is explained below:

Example 1:

Let us assume the encoded set of numbers given to you is:

input1: 5

input2: {1, 51, 436, 7860, 41236}

Step 1:

Starting from the 0

index of the array pick up digits as per below:

0 index – pick up the units value of the number (in this case is 1).

1 index - pick up the tens value of the number (in this case it is 5).

2 index - pick up the hundreds value of the number (in this case it is 4).

3 index - pick up the thousands value of the number (in this case it is 7).

4 index - pick up the ten thousands value of the number (in this case it is 4).

(Continue this for all the elements of the input array).

The array generated from Step 1 will then be – {1, 5, 4, 7, 4}.

Step 2:

Square each number present in the array generated in Step 1.

{1, 25, 16, 49, 16}

Step 3:

Calculate the sum of all elements of the array generated in Step 2 to get the final result. The result will be = 107.

Note:

Note:

1) While picking up a number in Step1, if you observe that the number is smaller than the required position then use 0.

2) input1 represents the number of elements in input2 and

input2[] is the array of numbers.

For example:

Input	Result
5 1 51 436 7860 41236	107

Answer: (penalty regime: 0 %)

```
1  import math
2  n=int(input())
3  a=[]
4  for i in range (0,n):
5      b=int(input())
6      a.append(b)
7  sum=0
8  for i in range(0,n):
9      for i in range(0,i+1):
```

```
 9        for j in range(0,i+1):
10            temp=a[i]%10
11            a[i]=a[i]/10
12        temp=math.floor(temp)
13        sum=sum+temp*temp
14   print(sum)
```

	Input	Expected	Got	
✔	5 1 51 436 7860 41236	107	107	✔
✔	4 1 1 111 1111	3	3	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Question **4**

Correct

Mark 1.00 out of 1.00

Write a program that reads integers from the user and stores them in a list. Your program should continue reading values until the user enters 0. Then it should display all of the values entered by the user (except for the 0) in ascending order, with one value appearing on each line. Use either the sort method or the sorted function to sort the list.

Sample Input

```
20
30
40
50
10
0
```

Sample Output

```
10
20
30
40
50
```

For example:

Input	Result
20	10
30	20
40	30
50	40
10	50
0	

Answer: (penalty regime: 0 %)

```
1  l=[]
2  while(True):
3      n=int(input())
4      if n==0:
5          break
6      l.append(n)
7  l.sort()
8  for i in range(len(l)):
9      print(l[i])
```

	Input	Expected	Got	
✔	20 30 40 50 10 0	10 20 30 40 50	10 20 30 40 50	✔
✔	22 33 44 11 55 0	11 22 33 44 55	11 22 33 44 55	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Question **5**

Correct

Mark 1.00 out of 1.00

Given a list and we have to find the index/position of minimum and maximum elements of a list in Python.

```
if list = [10, 1, 2, 20, 3, 20]
```

then it must print

1

20

First line of input is no of elements in a list

Followed by n inputs one by one.

Output line 1 contains index of minimum element

Output line 2 contains index of maximum element

Note: if more than one element is minimum / maximum then first index will be considered.

For example:

Input	Result
3 10 20 15	0 1

Answer: (penalty regime: 0 %)

```python
1  n=int(input())
2  l1=list()
3  for i in range(0,n):
4      num=int(input())
5      l1.append(num)
6      #continue
7  mi=l1[0]
8  ma=l1[0]
9  for i in l1:
10     mi=min(l1)
11     ma=max(l1)
12 print(l1.index(mi))
13 print(l1.index(ma))
```

	Input	Expected	Got	
✔	3 10 20 15	0 1	0 1	✔

	Input	Expected	Got	
✔	5 12 15 85 65 11	4 2	4 2	✔
✔	6 6 5 4 3 2 1	5 0	5 0	✔

Passed all tests! ✔

Correct
Marks for this submission: 1.00/1.00.

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Jump to...

WEEK-05-Extra ►