2 Questions Total score: 60.0

2 Programming Questions

1. A triplet sum + 30.0

2. PR Strings + 30.0

Question 1

Max. score 30.00

A triplet sum

You are given an array arr of length N **(1- based indexing)**. You have to find the triplet (i, j, k) such that $i < j < k$, $arr[i] \leq arr[j] \leq arr[k]$ and the sum of the triplet ($arr[i] + arr[j] + arr[k]$) is maximum. If there are multiple such triplets whose sum is maximum, print the lexicographically smallest among them.

Triplet (a_1, a_2, a_3) is lexicographically smaller than (b_1, b_2, b_3) if $(a_1 < b_1)$ or $(a_1 = b_1, a_2 < b_2)$ or $(a_1 = b_1, a_2 = b_2, a_3 < b_3)$.

For example, If there are two triplets **(1, 3, 5)** and **(1, 4, 5)** having a maximum sum. So, consider **(1, 3, 5)** because it is lexicographically smaller than **(1, 4, 5)**.

Input format

- The first line contains T denoting the number of test cases.
- The first line of each test case contains an integer N denoting the size of an array arr.
- The second line of each test case contains N denoting a space-separated integer denoting an array arr.

Output format

For each test case, print the triplet whose sum is maximum. If there are no such triplets, then print **-1** in the next line.

Constraints:

$1 \leq T \leq 10$
$1 \leq N \leq 10^5$
$-10^9 \leq arr[i] \leq 10^9$

ghd2020.hackerearth.com/challenges/test/GOCC14_coding_in_newgrad/problems/18e18e868c304194933881328fcaf2f8/

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End test

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Output format

For each test case, print the triplet whose sum is maximum. If there are no such triplets, then print -1 in the next line.

Constraints:

$1 \leq T \leq 10$
$1 \leq N \leq 10^5$
$-10^9 \leq arr[i] \leq 10^9$

Sample input 1 Copy

```
2
5
1 2 4 -1 5
5
4 2 1 3 2
```

Sample output 1 Copy

```
2 3 5
-1
```

Explanation

For Testcase1:

Consider all the triplets:
(1, 2, 3), (1, 2, 4), (1, 2, 5), (1, 3, 4), (1, 3, 5), (1, 4, 5), (2, 3, 4), (2, 3, 5), (2, 4, 5), (3, 4, 5).

From the above triplets, there are only 4 triplets that have both the above condition satisfied.
(1, 2, 3) => arr[1] + arr[2] + arr[3] = 7
(1, 2, 5) => arr[1] + arr[2] + arr[5] = 8
(1, 3, 5) => arr[1] + arr[3] + arr[5] = 10
(2, 3, 5) => arr[2] + arr[3] + arr[5] = 11

Triplet (2, 3, 5) has the maximum sum and smallest triplet among them.

ENG INTL 3:39 PM 8/22/2020

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There are no such triplets that satisfied both the above conditions.

The following test cases are the actual test cases of this question that may be used to evaluate your submission.

Sample input 2

Copy

```
1
6
-20 -10 -6 -8 23 25
```

Sample output 2

Copy

```
3 5 6
```

Sample input 3

Copy

```
4
12
20 -30 -8 -15 29 -18 27 22 -11 0 6 15
7
-2 -18 -28 5 5 -14 -28
11
-24 22 0 25 -14 12 8 5 -6 -14 -6
10
11 9 -5 23 8 -14 -18 -23 24 27
```

Sample output 3

Copy

```
10 11 12
1 4 5
1 2 4
4 9 10
```

Sample input 4

Copy

```
1
8
27 25 -4 -16 -17 -7 -20 2
```

Sample output 4

Copy

```
4 6 8
```

Sample input 5

Copy

Sample output 5