Closest Numbers

by HackerRank

Problem | Submissions | Leaderboard | Discussions | Editorial | Topics

Sorting is often useful as the first step in many different tasks. The most common task is to make finding things easier, but there are other uses, as well.

Challenge

Given a list of unsorted integers, $A = \{a_1, a_2, \ldots, a_N\}$, can you find the pair of elements that have the smallest absolute difference between them? If there are multiple pairs, find them all.

Input Format

The first line of input contains a single integer, N, representing the length of array A.
In the second line, there are N space-separated integers, $a_1, a_2, \ldots, a_N$, representing the elements of array A.

Output Format

Output the pairs of elements with the smallest difference. If there are multiple pairs, output all of them in ascending order, all on the same line (consecutively) with just a single space between each pair of numbers. If there's a number which lies in two pair, print it two times (see the sample case #3 for explanation).

Constraints

- $2 \leq N \leq 200000$
- $-10^7 \leq a_i \leq 10^7$
- $a_i \neq a_j, where\ 1 \leq i < j \leq N$

Sample Input #1

```
10
-20 -3916237 -357920 -3620601 7374819 -7330761 30 6246457 -6461594 266854
```

Sample Output #1

```
-20 30
```

Explanation

(30) - (-20) = 50, which is the smallest difference.

Sample Input #2

```
12
-20 -3916237 -357920 -3620601 7374819 -7330761 30 6246457 -6461594 266854 -520 -470
```

Sample Output #2

```
-520 -470 -20 30
```

Explanation

(-470) - (-520) = 30 - (-20) = 50, which is the smallest difference.

Sample Input #3

```
4
5 4 3 2
```

Sample Output #3

```
2 3 3 4 4 5
```

Explanation

Here, the minimum difference will be *1*. So valid pairs are *(2, 3)*, *(3, 4)*, and *(4, 5)*. So we have to print *2* once, *3* and *4* twice each, and *5* once.

Submissions:25233

Max Score:35

Difficulty: Easy

Rate This Challenge:

Need Help?

Greedy Technique

Sorting

Pair

More

Current Buffer (saved locally, editable)

Java 8

```
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
    }
}
```

Line: 1 Col: 1

Upload Code as File

Test against custom input

Run Code

Submit Code

Join us on IRC at #hackerrank on freenode for hugs or bugs.

Contest Calendar | Blog | Scoring | Environment | FAQ | About Us | Support | Careers | Terms Of Service | Privacy Policy | Request a Feature