Problem E
The Good, the Great, and the Superb

In this problem, we consider three types of integer sequences: the Good, the Great, and the Superb.

A sequence is considered as **Superb** if it contains at least 3 elements, and all the elements are of the same value. For example, $(1, 1, 1)$, $(4, 4, 4, 4)$, and $(9, 9, 9, 9, 9, 9)$ are Superb sequences.

A sequence is considered as **Great** if it contains at least 3 elements, and the difference between any successive elements is at most 1. By definition, all Superb sequences are also Great sequences. For example, $(1, 2, 3, 4)$, $(4, 4, 3, 2, 3)$, $(5, 5, 5)$ are Great sequences.

A sequence is considered as **Good** if it is constructed from concatenation of any Great or Superb sequences. By definition, all Great or Superb sequences are also Good sequences. For example,

- $(2, 2, 3, 6, 6, 6)$ from $(2, 2, 3)$ concatenated with $(6, 6, 6)$.
- $(5, 5, 5, 5)$ from $(5, 5, 5, 5)$.
- $(4, 3, 4, 7, 7, 8, 9, 2, 1, 0)$ from $(4, 3, 4)$ concatenated with $(7, 7, 8, 9)$ and $(2, 1, 0)$.

You are given a sequence of N integers S, your task is to find three integers: a, b, and c, which represent the minimum number of elements you need to modify such that S become a Good sequence, a Great sequence, and a Superb sequence, respectively.

Input

Input begins with an integer N ($3 \leq N \leq 100000$) representing the number of integers in S. The next line contains N integers: S_i ($0 \leq S_i \leq 9$) representing the given integer sequences.

Output

Output in a line three integers a b c (each separated by a single space) representing the minimum number of elements you need to modify from S such that it becomes a Good sequence, a Great sequence, and a Superb sequence, respectively.

Sample Input #1

```
4
1 2 3 4
```

Sample Output #1

```
0 0 3
```

Sample Input #2

```
7
2 8 0 2 3 7 4
```

Sample Output #2

```
2 3 5
```

Explanation for the sample input/output #2

Following are some example sequences (the underlined elements are modified):
2 8 0 2 3 7 4 : Original sequence.
2 1 0 2 3 4 4 : Good sequence (2 modifications).
2 2 2 2 3 4 4 : Great sequence (3 modifications).
2 2 2 2 2 2 2 : Superb sequence (5 modifications).

Sample Input #3

```
7
1 2 4 4 6 7 8
```

Sample Output #3

```
1 3 5
```

Explanation for the sample input/output #3

Following are some example sequences (the underlined elements are modified):
1 2 4 4 6 7 8 : Original sequence.
1 2 3 4 6 7 8 : Good sequence (1 modification).
2 3 4 5 6 7 8 : Great sequence (3 modifications).
4 4 4 4 4 4 4 : Superb sequence (5 modifications).