Spurthi'20

Oh, Spurthi'20. The time to gather all your friends and reflect on the heartwarming events of the past year...

'n' friends live are attending an event of Spurthi20 which can be represented as a number line. The i-th friend is in a team with an integer coordinate xi. The i-th friend can join the team with coordinates xi−1, xi+1 or stay at xi. Each friend is allowed to shift no more than once.

For all friends 1≤xi≤n holds, however, they can join teams with coordinates 0 and n+1 (if their teams are at 1 or n, respectively).

For example, let the initial positions be x=[1,2,4,4]. The final ones then can be [1,3,3,4], [0,2,3,3], [2,2,5,5], [2,1,3,5] and so on. The number of occupied teams is the number of distinct positions among the final ones.

So all friends choose the moves they want to perform. After that the number of occupied teams is calculated. What is the minimum and the maximum number of occupied teams can there be?

Input Format

The first line contains a single integer n (1≤n≤2⋅105) — the number of friends.

The second line contains n integers x1,x2,…,xn (1≤xi≤n) — the coordinates of the teams of the friends.

Constraints

1 ≤ n ≤ 2*10^5 1 ≤ xi ≤ n , 1 ≤ i ≤ n

Output Format

Print two integers — the minimum and the maximum possible number of occupied houses after all moves are performed.

Sample Input 0

```
4
1 2 4 4
```

Sample Output 0

```
2 4
```

Explanation 0

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In this example friends can go to [2,2,3,3]. So friend 1 goes to x[1]+1, friend 2          stays in his team x[2], friend 3 goes to x[3]-1 and friend 4 goes to x[4]-1. [1,1,3,3],     [2,2,3,3] or [2,2,4,4] are also all valid options to obtain 2 occupied houses.

For the maximum number of occupied teams, friends can go to [1,2,3,4] or to [0,2,4,5],      for example.
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Sample Input 1

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9
1 1 8 8 8 4 4 4 4
```

Sample Output 1

```
3 8
```

Sample Input 2

```
7
4 3 7 1 4 3 3
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Sample Output 2

```
3 6
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