D. Mister B and PR Shifts

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Some time ago Mister B detected a strange signal from the space, which he started to study.

After some transformation the signal turned out to be a permutation p of length n or its cyclic shift. For the further investigation Mister B need some basis, that's why he decided to choose cyclic shift of this permutation which has the minimum possible deviation.

Let's define the deviation of a permutation p as .

Find a cyclic shift of permutation p with minimum possible deviation. If there are multiple solutions, print any of them.

Let's denote id k ($0 \le k < n$) of a cyclic shift of permutation p as the number of right shifts needed to reach this shift, for example:

- $k = 0$: shift $p_1, p_2, \ldots p_n$,
- $k = 1$: shift $p_n, p_1, \ldots p_{n-1}$,
- ...,
- $k = n - 1$: shift $p_2, p_3, \ldots p_n, p_1$.

Input

First line contains single integer n ($2 \le n \le 10^6$) — the length of the permutation.

The second line contains n space-separated integers $p_1, p_2, \ldots, p_n$ ($1 \le p_i \le n$) — the elements of the permutation. It is guaranteed that all elements are distinct.

Output

Print two integers: the minimum deviation of cyclic shifts of permutation p and the id of such shift. If there are multiple solutions, print any of them.

Examples

input
3 1 2 3
output
0 0

input
3 2 3 1
output
0 1

input
3 3 2 1
output
2 1

Note

In the first sample test the given permutation p is the identity permutation, that's why its deviation equals to 0, the shift id equals to 0 as well.

In the second sample test the deviation of p equals to 4, the deviation of the 1-st cyclic shift $(1, 2, 3)$ equals to 0, the deviation of the 2-nd cyclic shift $(3, 1, 2)$ equals to 4, the optimal is the 1-st cyclic shift.

In the third sample test the deviation of p equals to 4, the deviation of the 1-st cyclic shift $(1, 3, 2)$ equals to 2, the deviation of the 2-nd cyclic shift $(2, 1, 3)$ also equals to 2, so the optimal are both 1-st and 2-nd cyclic shifts.