

A. Sort By Frequency

time limit per test: 1 second?

memory limit per test: 256 megabytes

Given N integers, sort the numbers in the ascending order based on their appearance frequency in the input. If frequencies tie, maintain ascending order of values.

Input

First line of the input contains integer N ($1 \leq N \leq 10^7$) – number of given integers. The next line, contains N integer M_i ($0 \leq M_i \leq 10^3$).

Output

Print the sorted numbers separated with a new line. You should print sorted sequence in each line with the index of appearance. In case of same number M_i you should sort them by the index of appearance.

Example

input

Скопировать

```
10
20 1 6 20 6 17 20 14 17 1
```

output

Скопировать

```
14 7
1 1
1 9
6 2
6 4
17 5
17 8
20 0
20 3
20 6
```