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CODEFORCES β
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HOME   CONTESTS   GYM   PROBLEMSET   GROUPS   RATING   API   CANADA CUP 🏆   SECTIONS

PROBLEMS   SUBMIT   STATUS   STANDINGS   CUSTOM TEST

B. Jeff and Periods

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

One day Jeff got hold of an integer sequence $a_1, a_2, \ldots, a_n$ of length n. The boy immediately decided to analyze the sequence. For that, he needs to find all values of X, for which these conditions hold:

- X occurs in sequence a.
- Consider all positions of numbers X in the sequence a (such i, that $a_i = x$). These numbers, sorted in the increasing order, must form an arithmetic progression.

Help Jeff, find all X that meet the problem conditions.

Input

The first line contains integer n ($1 \le n \le 10^5$). The next line contains integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^5$). The numbers are separated by spaces.

Output

In the first line print integer t — the number of valid X. On each of the next t lines print two integers X and p_x, where X is current suitable value, p_x is the common difference between numbers in the progression (if X occurs exactly once in the sequence, p_x must equal 0). Print the pairs in the order of increasing X.

Examples

input
```
1
2
```
output
```
1
2 0
```

input
```
8
1 2 1 3 1 2 1 5
```
output
```
4
1 2
2 4
3 0
5 0
```

Note

In the first test 2 occurs exactly once in the sequence, ergo $p_2 = 0$.