

## 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  $a_1, a_2, \dots, a_n$  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  $n$  ( $1 \leq n \leq 10^5$ ). The next line contains integers  $a_1, a_2, \dots, a_n$  ( $1 \leq a_i \leq 10^5$ ). 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  $p_2 = 0$ .