Problem F
Puzzle IV

POTYCZKI ALGORYTMICZNE

The 3rd Universal Cup, Stage 40: Potyczki. Limits: 1024 MB, 2 s. *21.06.2025*

You are given a sequence of n integers $p_1, p_2, \ldots, p_n$, initially a permutation of numbers from 1 to n. Your task is to sort it in ascending order. To achieve this, you can perform operations of two types: either add the value of an element to its adjacent element or subtract the value of an element from its adjacent element.

During the operations, the value of any element must not exceed the range $[1, n]$ at any point. The number of operations must not exceed 2 500 000.

Input

The first line of the input contains an integer n ($2 \leq n \leq 30\,000$), representing the length of the input sequence.

The second line of the input contains n pairwise distinct integers $p_1, p_2, \ldots, p_n$ ($1 \leq p_i \leq n$) – the sequence to be sorted.

Output

The first line of the output should contain a single integer r ($0 \leq r \leq 2\,500\,000$), representing the number of operations you want to perform.

The next r lines should contain descriptions of the consecutive operations in the following format:

- `a + b`: add the value of the b-th element to the a-th element.
- `a - b`: subtract the value of the b-th element from the a-th element.

In the above operations, $|a - b| = 1$ must always hold.

Note that you do not have to minimize the number of operations. It can be proven that it is always possible to sort the permutation by performing at most 2 500 000 operations.

Example

For the input data:	the correct result is:

`3`
`1 3 2`
	`3`
	`2 - 3`
	`3 + 2`
	`2 + 1`

Explanation: The sequence becomes $[1, 1, 2]$ after the first operation, then $[1, 1, 3]$ after the second operation, and $[1, 2, 3]$ after the third operation.