

# Jesse's Job

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            2 seconds  
Memory limit:         256 megabytes

*You had one thing to do, one thing! That is the only thing, I might add, that might have saved our lives.*

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—Walter White, *Breaking Bad*

Jesse has a permutation  $p_1, p_2, \dots, p_n$  of integers from 1 to  $n$ . His job is simple: to maximize the number of positions  $i$ , for which  $p_i = i$ . To achieve that, Jesse can do the following operation **exactly once**:

- Color some elements of the permutation in yellow, and all the remaining elements in blue. There has to be at least one yellow and at least one blue element.
- Then, separately sort yellow and blue numbers.

For example, for permutation (3, 5, 1, 6, 2, 4), Jesse can mark numbers 3, 5, 4 yellow, and 1, 6, 2 blue. After sorting yellow and blue elements separately, Jesse will get permutation (3, 4, 1, 2, 6, 5).

Jesse's score in the end is the number of positions  $i$ , for which  $p_i = i$ . Find the maximal score Jesse can achieve and some way to achieve it.

## Input

The first line contains a single integer  $t$  ( $1 \leq t \leq 10^5$ ) — the number of test cases. The description of test cases follows.

The first line of each test case contains a single integer  $n$  ( $2 \leq n \leq 10^6$ ) — the length of the permutation.

The second line of each test case contains  $n$  integers  $p_1, p_2, \dots, p_n$  ( $1 \leq p_i \leq n$ , all  $p_i$  are distinct) — elements of the permutation.

It is guaranteed that the sum of  $n$  over all test cases does not exceed  $10^6$ .

## Output

For every test case, in the first line, output the maximal score Jesse can achieve.

In the second line, output a single integer  $k$  ( $1 \leq k \leq n - 1$ ) — the number of elements Jesse should color yellow.

In the third line, output  $k$  integers  $pos_1, pos_2, \dots, pos_k$  ( $1 \leq pos_i \leq n$ , all  $pos_i$  are distinct) — the **positions** of elements that you are going to color in yellow.

If there are several ways to obtain the maximum score, output any of them.

## Example

standard input	standard output
3	0
2	1
2 1	1
4	4
2 1 4 3	2
6	1 2
3 5 4 2 6 1	4
	3
	1 3 4

## Note

In the first test case, for permutation  $(p_1, p_2) = (2, 1)$ , Jesse can mark  $p_1$  yellow and  $p_2$  blue. After sorting it will remain being  $(2, 1)$ , with score 0.

In the second test case, for permutation  $(p_1, p_2, p_3, p_4) = (2, 1, 4, 3)$ , Jesse can mark  $p_1, p_2$  yellow and  $p_3, p_4$  blue. After sorting the permutation will become  $(1, 2, 3, 4)$ , with score 4.