Problem D
Duo of Magicians

Time limit: 1 second
Memory limit: 2048 megabytes

Problem Description

Neko-chan and Laffey are a famous duo of magicians in the PCCA kingdom. Recently they came up with the following new trick for their next show.

In the beginning, Neko-chan will invite an audience to write down a random permutation $a = [a_1, a_2, \ldots, a_n]$ of $1, 2, \ldots, n$ without showing it to Laffey. After seeing the permutation, Neko-chan will hand out a deck of cards (at most n cards, otherwise, it would be too apparent that they are cheating) to another audience. Neko-chan will ask the new audience to shuffle the cards in any order and hand it to Laffey. Here comes the miracle: Laffey then can read out a sequence of operations to swap the elements in a, and the array a will be sorted in increasing order!

If you wonder how this trick works, here is the secret. After the permutation a is written, Neko-chan secretly writes down a swapping operation on each card. Each operation is denoted as an integer pair (x_i, y_i) meaning that Laffey has to swap a_{x_i} and a_{y_i}. When Laffey receives the deck of cards, she only has to sort the pairs for each operation in ascending order and read out the sorted pairs.

For example, suppose $a = [1, 3, 5, 2, 4]$ and Neko-chan writes down the pairs $(4, 5), (2, 3), (2, 4)$. Then Laffey will read out $(2, 3), (2, 4), (4, 5)$ one by one. As you can see, swapping the pairs (a_2, a_3), (a_2, a_4), (a_4, a_5) in this order will sort the array a.

To make the trick work, Neko-chan requires an efficient algorithm to help decide which operation should be written on each card. This task is too complex for Neko-chan. Can you help him?

Input Format

The first line of the input contains an integer T, denoting the number of test cases.

Each test case consists of two lines. The first line contains an integer n. The second line contains n integers $a_1, a_2, \ldots, a_n$.

Output Format

For each testcase, print an integer k denoting the number of cards given to Laffey in the first line.

k lines follow. In the i-th line, print two integers x_i, y_i denoting the i-th operation given to Laffey.

Your solution will be considered correct if it satisfies all the following conditions:

- $0 \leq k \leq n$
- $1 \leq x_i < y_i \leq n$ for $i = 1, 2, \ldots, k$
- When sorted in ascending order, the sequence of operations will sort a in increasing order.

If there are multiple possible solutions, print any.

Technical Specification

- $1 \leq T \leq 200$
- $2 \leq n \leq 10^5$
- $\sum n \leq 10^6$
- $1 \leq a_i \leq n$ for $i = 1, 2, \ldots, n$
- $a_i \neq a_j$ for $i \neq j$

Sample Input 1

```
3
5
1 3 5 2 4
6
6 5 4 3 2 1
3
1 2 3
```

Sample Output 1

```
3
2 3
2 4
4 5
5
3 4
2 5
1 2
1 6
1 2
0
```

Note

To sort the pairs in ascending order means to sort the pairs in the increasing order of the first element and the increasing order of the second element in case of ties.