

Dividing Sequence

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 1024 megabytes

Alice got a sequence A constructed by her neighbors. Since Alice doesn't like long sequences, she decides to divide the sequence into two (possibly empty) sequences B and C and give them back to her neighbors. Her division should meet the following constraints:

- B and C are both subsequences of sequence A .
- Each element of A belongs to exactly one of the sequences B or C .
- $B \leq C$ in lexicographical order.

Here we define a sequence $P = p_1, p_2, \dots, p_u$ of length u to be lexicographically smaller than a sequence $Q = q_1, q_2, \dots, q_v$ of length v if one of the following constraints is true:

- $u < v$ and P is a prefix of Q .
- There exists an integer $1 \leq k \leq \min(u, v)$ such that $p_i = q_i$ for all $1 \leq i < k$ and $p_k < q_k$.

As a fair girl, Alice hopes to divide fairly such that the lexicographical order of C is as small as possible. Please tell Alice the minimum possible C .

Input

There are multiple test cases. The first line of the input contains an integer T ($1 \leq T \leq 10^4$) indicating the number of test cases. For each test case:

The first line contains an integer n ($1 \leq n \leq 5 \times 10^3$) indicating the length of the sequence A .

The second line contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^5$), where a_i is the i -th element of sequence A .

It is guaranteed that the sum of n of all test cases does not exceed 10^4 .

Output

For each test case output two lines. First output one line containing one integer m indicating the length of the optimal C . Then output a second line containing m integers c_1, c_2, \dots, c_m separated by a space, where c_i is the i -th element of the optimal C .

Example

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