

J Neighbor

Hyjhyj gave Hongzy a tree as the gift for Christmas. Hyjhyj studies computer science, so the tree is not a Christmas tree, but a tree $T = (V, E)$ in graph theory.

Unfortunately, Hongzy accidentally lost the tree on his way to the classroom. He was very sad about it. However, he remembered the number of vertices in the tree, which is n , and the smallest neighbor of each vertex, denoted by a_1, a_2, \dots, a_n . You, as Hongzy's friend, need to help him restore the tree.

You need to tell him, given the information, whether there are at least two possible trees, or the tree is uniquely determined, or the trees don't exist at all (he's misremembering). In particular, if the tree is unique, you need to **output the tree** as required.

A tree is a connected undirected graph with n nodes and $n - 1$ edges. Vertices u and v are called **neighbors** if and only if the edge (u, v) exists in the tree.

Input

The input contains multiple cases.

The first line of the input contains a single integer T ($1 \leq T \leq 2 \cdot 10^5$), indicating the number of test cases.

The first line contains a integers n ($2 \leq n \leq 5 \cdot 10^5$), representing the number of vertices.

The next line contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq n$), where a_i denotes the minimum vertex connected to i .

It is guaranteed that $\sum n \leq 5 \cdot 10^5$ for all test cases.

Output

For each test case, there are three cases:

- If there are more than one tree that satisfies the condition, print **Many** in one line.
- If no tree satisfies the condition, print **None** in one line.
- Otherwise, print **Unique** in one line. And in the next $n - 1$ lines, output the tree. Each line contains two integers x, y ($1 \leq x < y \leq n$) representing an edge (x, y) . **You need to sort all the edges** by x first from smallest to largest, and then by y from smallest to largest when x is the same.

Sample Input 1	Sample Output 1
3	Many
6	Unique
3 5 1 1 2 1	1 2
5	2 3
2 1 2 3 4	3 4
4	4 5
2 3 4 2	None

Explanation

For the first tree of sample 1, there are at least two possible trees, as shown in the following figures.

