Problem C. Continued Story

Input file:	*standard input*
Output file:	*standard output*
Time limit:	3 seconds
Memory limit:	256 mebibytes

Chiaki has a rooted tree with n nodes numbered 1 to n. The root is node 1. Each edge has a positive integer weight on it.

Now, two players are playing a game on the tree. They alternate turns. On each turn, the player should choose an edge and decrease its weight by 1.

If an edge's weight becomes 0, it will be removed. After an edge is removed, the tree will be split into two parts. The part without the root node should be discarded (permanently removed from the tree).

If, on a turn, a player has no edge left to choose, this player loses the game.

Chiaki, as the player who moves first, would like to know which edges she can choose at the first turn, to make sure she will win if both players play the rest of the game optimally. Help her find that out.

Input

There are multiple test cases. The first line of the input contains an integer T, indicating the number of test cases. For each test case:

The first line contains an integer n ($1 \le n \le 10^6$): the number of nodes in the tree.

The next $n-1$ lines describe nodes $2, 3, \ldots, n$, in that order. A line describing node i contains two integers p_i and w_i ($1 \le p_i \le n$, $1 \le w_i \le 10^9$) where p_i denotes the parent of the i-th node and w_i is the weight of the edge between i and p_i.

It is guaranteed that the sum of n in all test cases will not exceed 10^6.

Output

For each test case, output two lines.

The first line must contain a single integer m: the number of edges Chiaki can choose on the first move to make sure she will win if both players play optimally.

The second line must contain m integers in ascending order, separated by single spaces. A number u must appear in the output if Chiaki can choose the edge between node u and its parent.

Example

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