

Submit: `game.c` / `game.cpp` / `game.pas`
 Input: `stdin`
 Output: `stdout`

Time limit: 1 s
 Memory limit: 64 MB
 Points: 100

MaŁŁko and Kubko, both wery enjoyed playing games, have discovered new type of game: tree game. In this game first player chooses vertex of a tree. Then players (beginning with second player) alternately choose neighbor of last choosed vertex which was not choosed before, until one player can't make a move. This player is then determined as a looser and the other one is the winner. MaŁŁko is beginning the game but unforutnatelly Kubko is very experienced player and he will never make a mistake. Therefore MaŁŁko has asked you for help.

Task:

Our tree has N vertices conventionally numbered $1..N$ and exactly $N - 1$ edges connecting them. Write a program, which determines all vertieces in which MaŁŁko can begin the game and will win althrough Kubko will be playing perfectly.

Input:

On the first line, there is one single number N , ($1 \leq N \leq 2\,000\,000$), which is equal to the number of nodes in the tree. $N - 1$ lines follows, on the i -th line is a single integer a_i , which means there is edge in the tree connecting $(i + 1)$ -th vertex with vertex a_i . (Moreover you can suppose $a_i \leq i$).

Output:

Output consists of several lines, on each one there is single number of node, where MaŁŁko can begin the game and can win, regardless how is Kubko playing. Numbers on the ouput are sorted in ascending order.

Example:

input	output
3	2
1	3
1	

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