Problem F. Kill All Termites

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	256 mebibytes

A tree is an undirected connected graph with n vertices and $n - 1$ edges.

You are given a tree. There are termites in some vertices of this tree. Your task is to kill them all. To do so, you can poison some of the vertices. If a termite visits a poisoned vertex, it immediately dies. Every second, each termite moves to an adjacent vertex. A termite cannot move along the same edge twice in a row, except when it gets into a leaf. Find the minimal possible number of vertices you can poison so that all the termites will eventually die, regardless of their initial positions and strategies.

Input

The first line contains one integer n, the size of the tree ($1 \le n \le 100\,000$).

The second line contains $n - 1$ integers $p_2, p_3, \ldots, p_n$, meaning that there is an edge between vertices i and p_i for $2 \le i \le n$ ($1 \le p_i < i$).

Output

Print one integer: the answer.

Examples

standard input	standard output
1	1
2 1	1
8 1 1 2 1 2 3 2	2