How Deep Is Your Node?

Problem

Submissions

Discussion Coming Soon

Tahsin, guide of the BFS/DFS lectures wants to ask an easy question to Atakan. Tahsin gives a tree with root to Atakan, and asks the depth of a specific node.

Help Atakan to solve this question.

Note: Depth of a node can be defined as number of edges from the root node to the given node, root node is always Node 1 and depth of Node 1 is 0.

Input Format

The first line will be the number of nodes N,

In the next line there will be $N-1$ integers, i-th of them given p_i the parent of Node $i+1$

The last line will be the node whose depth is asked Q

Output Format

One integer in one line, depth of Q.

Constraints

$2 \leq N \leq 2 * 10^5, 1 \leq Q \leq N, 1 \leq p_i < i$

It is guaranteed that the given data forms a tree.

Sample Input 1

```
6
1 2 3 3 3
1
```

Sample Output 1

```
0
```

Sample Input 2

```
6
1 1 1 3 5
5
```

Sample Output 2

```
2
```

C++ (GCC 9.2.0) Bright

Memory Limit (kB) : 256000 **Time Limit (s) :** 1

```cpp
#include <iostream>
#include <vector>
#include <queue>

using namespace std;

int find(vector<vector<int>> &tree, int target){
    int n = tree.size();
    vector<int> depths(n, -1);

    queue<int> q;
    q.push(0);
    depths[0] = 0;
```

```
14
15      while(!q.empty()){
16          int curr = q.front();
17          q.pop();
18
19          for(int child: tree[curr]){
20              if(depths[child] == -1){
21                  depths[child] = depths[curr] + 1;
22                  q.push(child);
23              }
24          }
25      }
26
27      return depths[target];
28  }
29  int main(){
30      int n;
31      cin >> n;
```

Upload File

Test against custom test case

Run Code

Submit

Sample Test Case 0

Sample Test Case 1

Accepted

Input(stdin)

```
1  6
2  1 2 3 3 3
3  1
```

Output(stdin)

```
1  0
2
```

Expected Output

```
1  0
```