Crack a Hack

Keko the Brilliant

Question link in Hackerrank:
https://www.hackerrank.com/contests/world-codesprint-12/challenges/keko-the-brilliant/problem

Course: Algorithmic Problem Solving
Course code: 17ECSE309

Submitted By:

Pooja Harish Pandit

01FE15BCS131

Code: (In C++)

```cpp
#include <bits/stdc++.h>
#include <iostream>
#include <vector>

using namespace std;
const int MAX = 1000000;

int a[MAX];
vector<int> adjList[MAX];
multiset<int> s[MAX];

void dfs (int v, int temp)
{
    for (int u : adjList[v])
    {
        if (u == temp)
        {
            continue;
        }
        dfs(u, v);
        if (s[u].size() > s[v].size())
        {
```

```cpp
            swap(s[v], s[u]);
        }
        while (!s[u].empty())
        {
            s[v].insert(*s[u].begin());
            s[u].erase(s[u].begin());
        }
    }
    multiset<int>::iterator it = s[v].lower_bound(-a[v] + 1);
    if (it != s[v].end())
    {
        s[v].erase(it);
    }
    s[v].insert(-a[v]);
}

int main()
{
    int n;
    scanf("%d", &n);
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &a[i]);
```

```
    }
    for (int i = 0; i < n - 1; i++)
    {
        int x, y;
        scanf("%d %d", &x, &y);
        adjList[--x].push_back(--y);
        adjList[y].push_back(x);
    }
    dfs(0, 0);
    printf("%d\n", n - (int) s[0].size());
    return 0;
}
```

References:

Learning vectors: https://www.geeksforgeeks.org/vector-in-cpp-stl

Information about graphs: https://www.geeksforgeeks.org/graph-and-its-representations

DFS in C++: https://discuss.codechef.com/questions/5083/depth-first-search-code-in-c