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Language: C++

```
1 #include <bits/stdc++.h>
2 using namespace std;
3
4 #define ll long long#define int long long
5 #define pb push_back
6 #define all(x) x.begin(), x.end()
7 #define vi vector<int>
8 #define br cout << endl;
9
10
11 ll dfs(int i,int par, vi&tiner, vi&timen,vi &value, vi g[], int t)
12 {
13     // if(g[i].size() == 1 and i!= 1){
14     //     int ans = 0;
15     //     if(t == tiner[i]){
16     //         ans = value[i]/2;
17     //     }else if(t < tiner[i]){
18     //         ans = value[i];
19     //     }else if(t > tiner[i]){
20     //         ans = 0;
21     //     }
22     //     return ans;
23     // }
24     ll ans = 0;
25     if(t == tiner[i]){
26         ans = value[i]/2;
27     }else if(t < tiner[i]){
28         ans = value[i];
29     }
30     ll x = 0;
31     for(auto child : g[i])
32     {
33         if(child != par)
34         {
35             x = max(x, dfs(child, i, tiner, timen, value, g, t + 1));
36         }
37     }
38     // cout << i << " " << ans+ x;br;
39     return ans + x;
40 }
41
42
43
44 int dfstime(int i,int par, vi &v, vi g[], int rpos)
45 {
46     if(i == rpos)
47     {
48         v.pb(rpos);
49         return 1;
50     }
51     v.pb(i);
52     for(auto child : g[i])
53     {
54         if(child == par) continue;
55         if(dfstime(child, i, v, g, rpos)){
56             return 1;
57         }
58     }
59     v.pop_back();
60     return 0;
61 }
62
63
64 signed main() {
65     int n, rpos; cin >> n >> rpos;
66     vector<int> g[n+1];
67
68     for(int i=0; i<n-1; i++){
69         int u, v; cin >> u >> v;
70         g[u].pb(v);
71         g[v].pb(u);
72     }
73
74     vi value(n+1, 0);
75     for(int i=1; i<=n; i++){
76         cin >> value[i];
77     }
78
79     vector<int> tiner(n+1, INT_MAX);
80     vector<int> timen(n+1, -1); timen[1] = 0;
81
82     int t = 0;
83
84     vector<int> robberPath;
85     dfstime(1, -1, robberPath, g, rpos);
86
87     for(int i= robberPath.size() - 1; i>=0; i--){
88         tiner[robberPath[i]] = robberPath.size() - i-1;
89     }
90
91
92
93     // for(int i=0; i<tiner.size(); i++){
94     //     cout << tiner[i] << " ";
95     // }
96     // br;
97     // for(int i=0; i<robberPath.size(); i++){
98     //     cout << robberPath[i] << " ";
99     // }
100     // br;
101
102     cout << dfs(1,-1, tiner, timen, value, g, 0);br;
103     return 0;
104 }
105
106
107
```

✓TEST CASE 1 + 13 Hidden (1 failed)

Test Case 1:

Result: Passed