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## 1. Social Connections

ALL

A popular social media platform provides a feature to connect people online. Connections are represented as an undirected graph where a user can see the profiles of those they are connected to.

There are *connection\_nodes* users numbered 1 to *connection\_nodes*, and *connection\_edges* connections where the *i*<sup>th</sup> pair connects nodes *connection\_from[i]* and *connection\_to[i]*. The *queries* array contains node numbers. Find the number of users whose profiles are visible to *query[i]*. Report an array of integers where the *i*<sup>th</sup> value is the answer to the *i*<sup>th</sup> query.

### Example

*connection\_nodes* = 7  
*connection\_edges* = 4  
*connection\_from* = [1, 2, 3, 5]  
*connection\_to* = [2, 3, 4, 6]  
*queries* = [1, 3, 5, 7].

7

5 — 6

1 — 2 — 3 — 4

Language C++20

Environment

```

15 * 1. INTEGER connection_nodes
16 * 2. INTEGER_ARRAY connection_from
17 * 3. INTEGER_ARRAY connection_to
18 * 4. INTEGER_ARRAY queries
19 */
20 vector<int> parent;
21 vector<int> sizes;
22
23 int get(int node) {
24     if(parent[node] == node) return node;
25     return parent[node] = get(parent[node]);
26 }
27
28 void adj(int u, int v) {
29     u = get(u);
30     v = get(v);
31
32     if(u != v) {
33         if(sizes[u] < sizes[v]) swap(u,
34             parent[v] = u;
35             sizes[u] += sizes[v];
36     }
37 }
38
39 vector<int> getVisibleProfilesCount(int
40     vector<int> queries) {
41     parent.resize(connection_nodes +
42         sizes.resize(connection_nodes +
43
44     for(int i = 0; i <= connection_
45         parent[i] = i;
46     }
47
48     for(int i = 0; i < connection_
49         adj(connection_from[i], c

```

Test Results

Custom Input

Visible

Number of Visible

```

17 * 3. INTEGER_ARRAY connection_to
18 * 4. INTEGER_ARRAY queries
19 */
20 vector<int> parent;
21 vector<int> sizes;
22
23 int get(int node) {
24     if(parent[node] == node) return node;
25     return parent[node] = get(parent[node]);
26 }
27
28 void adj(int u, int v) {
29     u = get(u);
30     v = get(v);
31
32     if(u != v) {
33         if(sizes[u] < sizes[v]) swap(u, v);
34         parent[v] = u;
35         sizes[u] += sizes[v];
36     }
37 }
38
39 vector<int> getVisibleProfilesCount(int connection_nodes, vector<int> connection_from, vector<int> connection_to, vector<int> queries) {
40
41     parent.resize(connection_nodes + 1);
42     sizes.resize(connection_nodes + 1, 1);
43
44     for(int i = 0; i <= connection_nodes; i++){
45         parent[i] = i;
46     }
47
48     for(int i = 0; i < connection_from.size(); i++){
49         adj(connection_from[i], connection_to[i]);
50     }
51
52     vector<int> res;
53
54     for(auto q : queries) {
55         int root = get(q); //will make
56         res.push_back(sizes[root]);
57     }
58
59     return res;
60 }
61
62 > int main() ...

```

Test Results Custom Input

```

32 if(u != v) {
33     if(sizes[u] < sizes[v]) swap(u, v);
34     parent[v] = u;
35     sizes[u] += sizes[v];
36 }
37 }
38
39 vector<int> getVisibleProfilesCount(int connection_nodes, vector<int> connection_from, vector<int> connection_to, vector<int> queries) {
40
41     parent.resize(connection_nodes + 1);
42     sizes.resize(connection_nodes + 1, 1);
43
44     for(int i = 0; i <= connection_nodes; i++){
45         parent[i] = i;
46     }
47
48     for(int i = 0; i < connection_from.size(); i++){
49         adj(connection_from[i], connection_to[i]);
50     }
51
52     vector<int> res;
53
54     for(auto q : queries) {
55         int root = get(q); //will make
56         res.push_back(sizes[root]);
57     }
58
59     return res;
60 }
61
62 > int main() ...

```

Test Results Custom Input Run Co

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