

```
1 #include "../bits/stdc++.h"
2 // 各連結成分内の要素数が取得できる UnionFind
3 // verified: http://judge.u-aizu.ac.jp/onlinejudge/review.jsp?rid=3380552
4 class UnionFind
5 {
6     std::vector<int> data;
7
8 public:
9     UnionFind(int size) : data(size, -1) {}
10    bool unite(int x, int y)
11    {
12        x = root(x);
13        y = root(y);
14        if (x != y)
15        {
16            if (data[y] < data[x])
17                std::swap(x, y);
18            data[x] += data[y];
19            data[y] = x;
20        }
21        return x != y;
22    }
23    bool find(int x, int y)
24    {
25        return root(x) == root(y);
26    }
27    int root(int x)
28    {
29        return data[x] < 0 ? x : data[x] = root(data[x]);
30    }
31    int size(int x)
32    {
33        return -data[root(x)];
34    }
35 };
36
```