

Data Structures

Danz

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Contents

1	Data Structures	3
1.1	Disjoint Set Union	3

Chapter 1

Data Structures

1.1 Disjoint Set Union

```
1 class DSU {
2     private:
3         vector<ll> g;
4
5     public:
6         DSU(ll n) : g(n + 1, -1), components(n) {}
7         ll components;
8
9         ll get(ll x) {
10             if (g[x] < 0) return x;
11             return g[x] = get(g[x]);
12         }
13
14         bool merge(ll x, ll y) {
15             ll a = get(x), b = get(y);
16             if (a == b) return false;
17
18             g[a] += g[b], g[b] = a, components--;
19             return true;
20         }
21 };
```

Listing 1.1: Disjoint Set Union Implementation