

RemoveStone.java

```
1  package com.example.graph;
2
3  import java.util.HashMap;
4  import java.util.Map;
5
6  public class RemoveStone {
7      public int removeStones(int[][] stones) {
8          3 if (stones == null || stones.length <= 1) {
9              return 0;
10         }
11
12         int n = stones.length;
13
14         UnionFind uf = new UnionFind();
15         for (int[] edge : stones) {
16             2 uf.union(edge[0] + 10001, edge[1]);
17         }
18
19         2 return n - uf.getCount();
20     }
21
22     class UnionFind {
23         Map<Integer, Integer> parents;
24         int count;
25
26         public UnionFind() {
27             parents = new HashMap<>();
28             count = 0;
29         }
30
31         public int getCount() {
32             1 return count;
33         }
34
35         public int find(int x) {
36             1 if (!parents.containsKey(x)) {
37                 parents.put(x, x);
38             1 count++;
39         }
40
41         1 if (x != parents.get(x)) {
42             parents.put(x, find(parents.get(x)));
43         }
44
45         1 return parents.get(x);
46     }
47
48     public void union(int x, int y) {
```

```

49         int rootX = find(x);
50         int rootY = find(y);
51 1         if (rootX == rootY) {
52             return;
53         }
54
55         parents.put(rootX, rootY);
56 1         count--;
57     }
58 }
59 }

```

Mutations

<u>8</u>	1. changed conditional boundary → SURVIVED 2. negated conditional → KILLED 3. negated conditional → KILLED
<u>16</u>	1. Replaced integer addition with subtraction → SURVIVED 2. removed call to com/example/graph/RemoveStone\$UnionFind::union → KILLED
<u>19</u>	1. replaced int return with 0 for com/example/graph/RemoveStone::removeStones → KILLED 2. Replaced integer subtraction with addition → KILLED
<u>32</u>	1. replaced int return with 0 for com/example/graph/RemoveStone\$UnionFind::getCount → KILLED
<u>36</u>	1. negated conditional → KILLED
<u>38</u>	1. Replaced integer addition with subtraction → KILLED
<u>41</u>	1. negated conditional → KILLED
<u>45</u>	1. replaced int return with 0 for com/example/graph/RemoveStone\$UnionFind::find → KILLED
<u>51</u>	1. negated conditional → KILLED
<u>56</u>	1. Replaced integer subtraction with addition → KILLED

Active mutators

- CONDITIONALS_BOUNDARY
- EMPTY_RETURNS
- FALSE_RETURNS
- INCREMENTS
- INVERT_NEGS
- MATH
- NEGATE_CONDITIONALS
- NULL_RETURNS
- PRIMITIVE_RETURNS
- TRUE_RETURNS
- VOID_METHOD_CALLS

Tests examined

- com.example.graph.RemoveStoneTest.testRemoveStones(com.example.graph.RemoveStoneTest) (0 ms)

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