

- 8.1. Add operations `getMin(x)`, `getMax(x)`, `getSize(x)` to Disjoint Sets, which return the minimum, maximum and number of elements in the set x .
- 8.2. There is an empty graph. Edges are added one by one. After each addition, find the size of the largest connected component.
- 8.3. There is an empty graph. There are two types of queries: 1) add an edge 2) find the number of edges in the connected component x .
- 8.4. There is an empty graph. There are two types of queries: 1) add an edge 2) find the number of connected components that are trees.
- 8.5. There is an empty graph. There are two types of queries: 1) add an edge 2) find the number of connected components that are bipartite graphs.
- 8.6. Let all elements in sets have some weights. Add the following operations to Disjoint Sets: 1) increase all weights in the given set by d , 2) find the current weight of the element x .
- 8.7. Given an array a , filled with zeros. There are two types of queries: 1) $a_i := 1$ 2) find the nearest zero to i .
- 8.8. Given a tree, each node is painted black. There are two types of queries: 1) paint the given node white 2) find the closest black ancestor of the given node.