Dynamic Connectivity - Weighted quick union

Connected ⇒ check if root(p) == root(q)
(p,q)

union(p,q) ⇒ set root(p) to (replace) root of (q) if the number of nodes under p is smaller. else vice versa.

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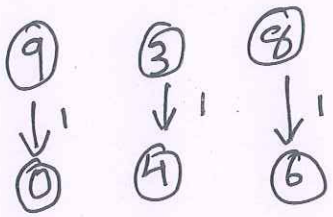
step 0

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

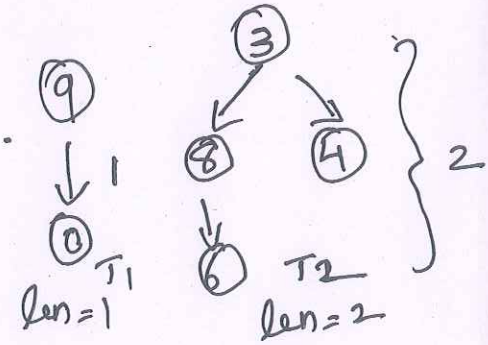
step 1, 2, 3 union(9,0) / union(3,4) / union(8,6)

0	1	2	3	4	5	6	7	8	9
9	1	2	3	3	5	8	7	8	9



step 4 union(3,6) ⇒ root(3) = 3, root(6) = 8

0	1	2	3	4	5	6	7	8	9
9	1	2	3	3	5	8	7	3	9



step 5 union(0,8) ⇒ root(0) = 9, root(8) = 3

len(T_1) < len(T_2)

0	1	2	3	4	5	6	7	8	9
9	1	2	3	3	5	8	7	3	3