

Activity 8: Learning by doing-2

There are 4 different techniques to solve the given problem. They are -

1. Quick find
2. Quick Union
3. Weighted Quick Union
4. Weighted Quick Union with Path Suppression

Of all the above mentioned methods, the fourth one is the most optimal method for the following reasons

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1. The complexity of this method is $O(\lg^*N)$.
2. It can take upto 2 to the exponent of 65536 inputs and compute them in 6 seconds.
3. It makes the final tree as flat as possible. This abysmally reduces the time taken to traverse the final tree.