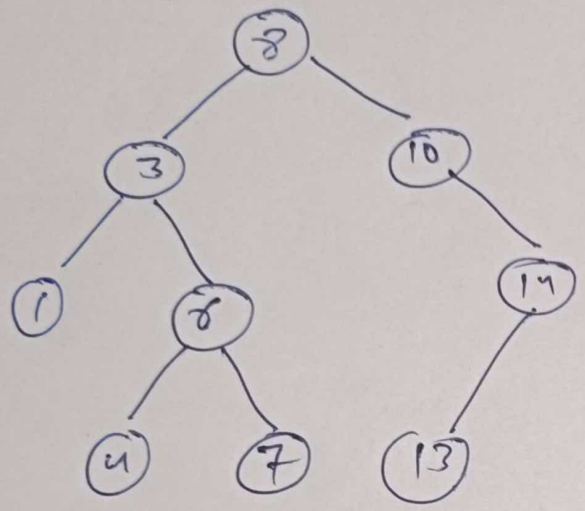
1026. Maximum Difference Between Node and Ancestor

Approach → 1 Brute force



⇒ pick one node and find the difference between that node and all its child one by one and update the maxdiff variable

ex → pick node 8 and child of node 8 are 3, 10, 1, 6, 14, 4, 7, 13

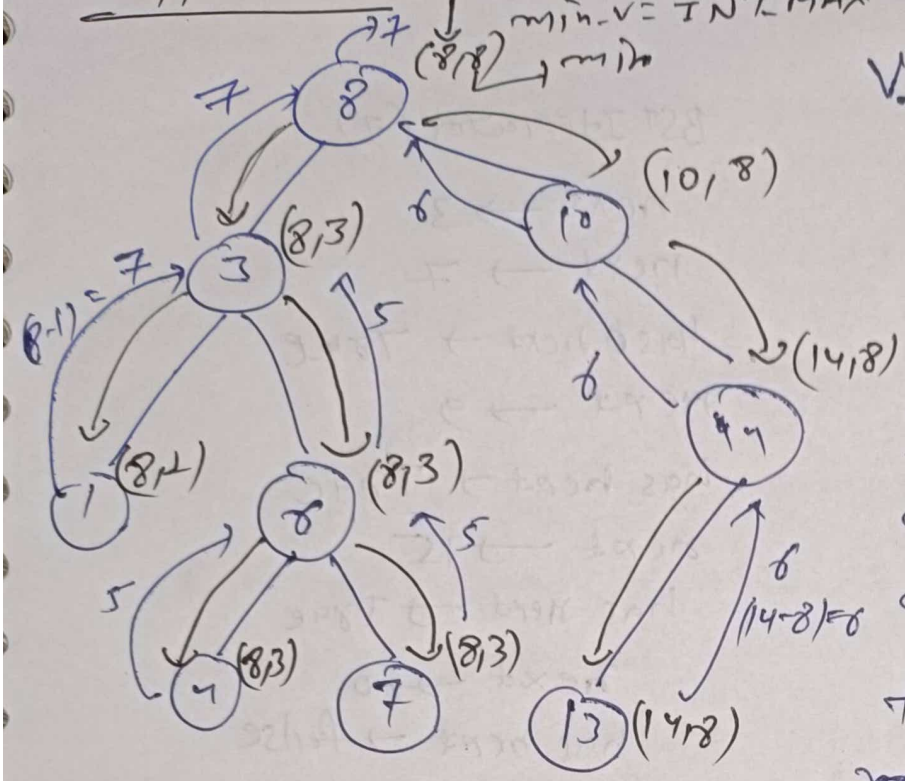
difference are = |8-3| = 5
= |8-10| = 2
= |8-1| = 7
:
so on

on the basis now pick 3 then 10 and follow the same process.

T.C. = $O(n^2)$ → because for every node we traverse all its child

S.C. = $O(n)$ → in the worst case recursion stack take S.C. $O(n)$.

Approach-2



we have to find

$V_{max} = abs(a.val - b.val)$

where a is an ancestor of b.

In Brute force approach we are doing that we travers all the childs of any node.

Imp!- To find the answer we have to traverse all the childs of every node. But we can do other approach of traversing the childs of any nod.

root to leaf path :- In the root to leaf path all the node are either child or ancestor. That means for traversing all child we go for root to leaf path like we take a min_v, max_v and for every root to leaf path if we reach leaf we return (max_v - min_v)