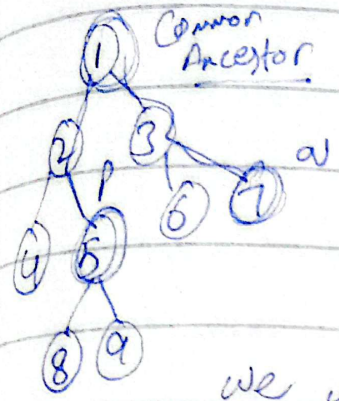
Lowest Common Ancestor

LCA → first node that exist in both sub trees

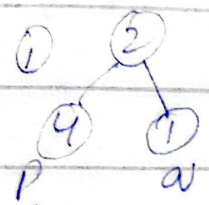
Backtracking

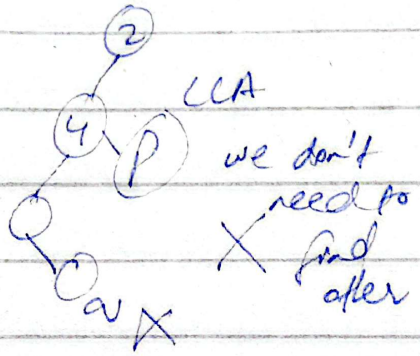


* Node can be the ancestor of itself aswell.
* p != q

→ we will try to find the subtree where p and q exists.

→ we will give the LCA for each level.





Pseudocode:

```
Node* LCA(root, p, q){
if(root==NULL) return NULL;
if(root==p||root==q)
    return root : LCA
leftLCA = LCA(root->left, p, q)
rightLCA = LCA(root->right, p, q)
if(leftLCA && RightLCA){
    return root
else if(leftLCA != NULL)
    return leftLCA;
else
    return rightLCA;
```

TC = O(n)

SC = O(n)