106. Construct Binary Tree from In order and Post order Traversal

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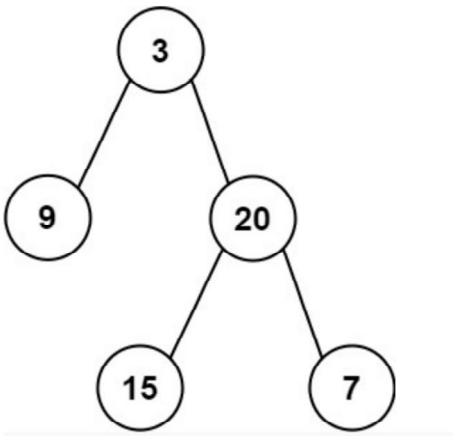
Given two integer arrays `inorder` and `postorder` where `inorder` is the inorder traversal of a binary tree and `postorder` is the postorder traversal of the same tree, construct and return *the binary tree*.

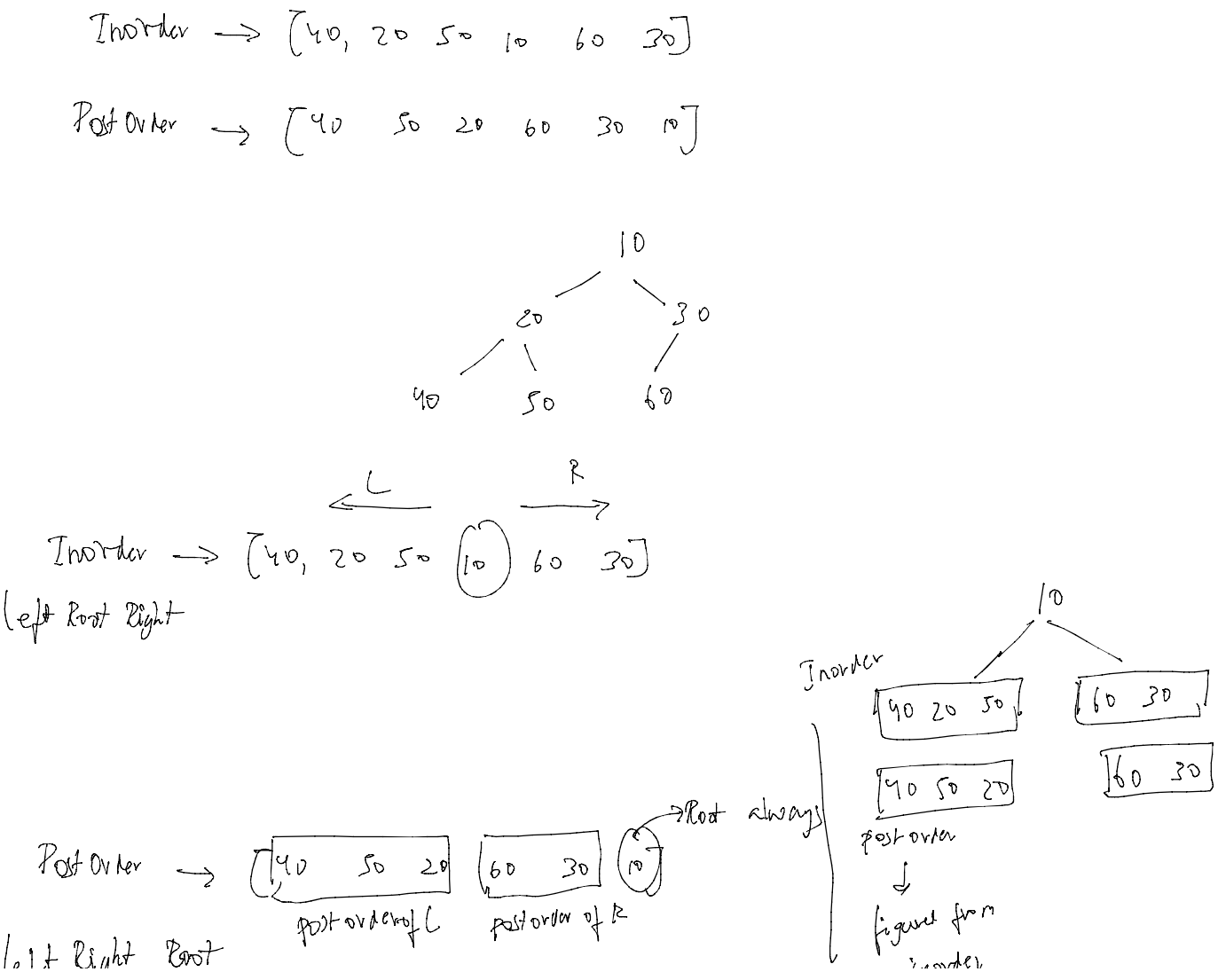
Example 1:

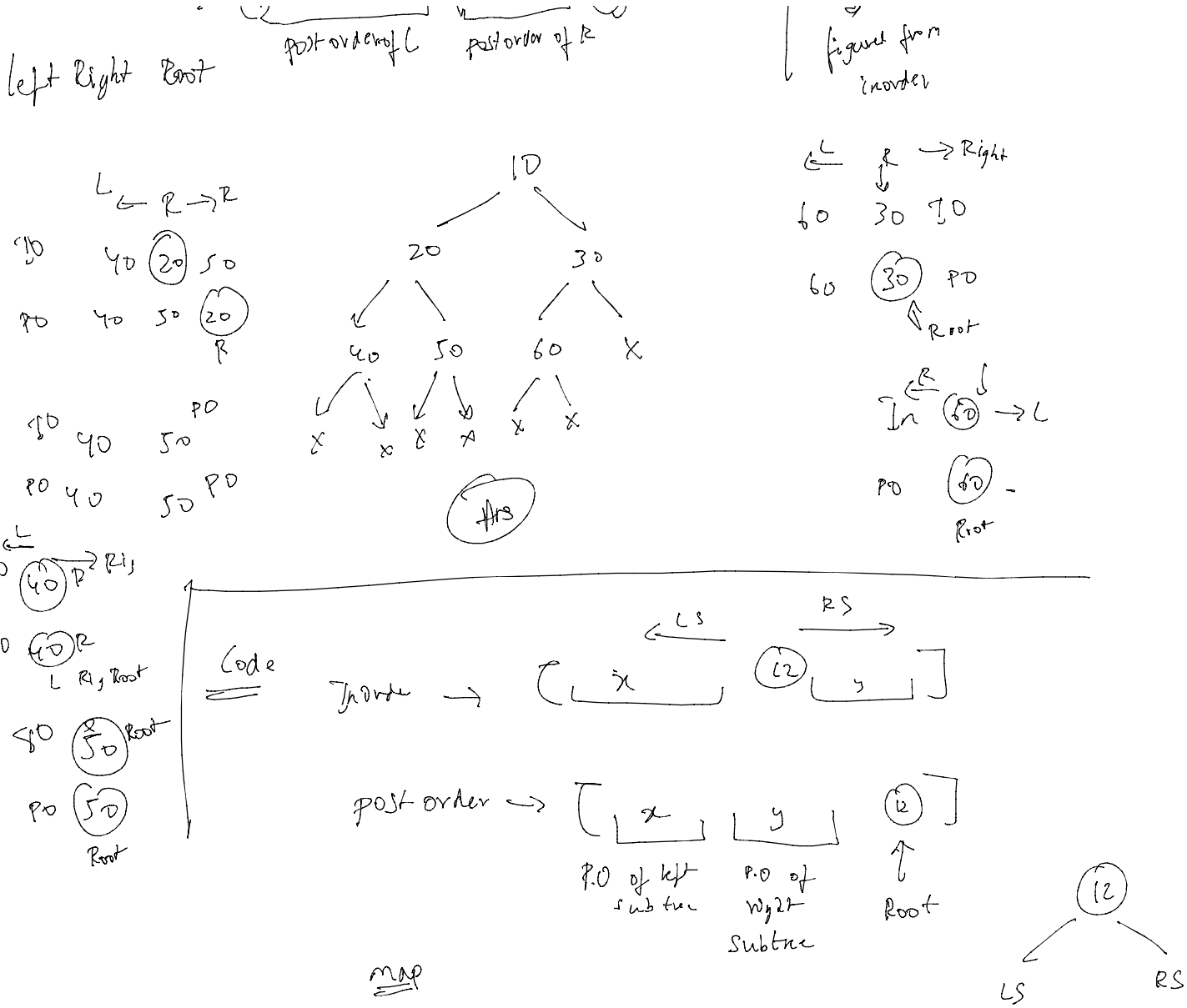



```
Input: inorder = [9,3,15,20,7], postorder = [9,15,7,20,3]
Output: [3,9,20,null,null,15,7]
```

Example 2:

```
Input: inorder = [-1], postorder = [-1]
Output: [-1]
```






```java
class Solution {
    public TreeNode buildTree(int[] inorder, int[] postorder) {
        if (inorder == null || postorder == null || inorder.length != postorder.length)
            return null;
        HashMap<Integer, Integer> hm = new HashMap<Integer,Integer>();
        for (int i=0;i<inorder.length;++i)
            hm.put(inorder[i], i);
        return buildTreePostIn(inorder, 0, inorder.length-1, postorder, 0,
                               postorder.length-1,hm);
    }

    private TreeNode buildTreePostIn(int[] inorder, int is, int ie, int[] postorder, int ps, int pe,
                                     HashMap<Integer,Integer> hm){
        if (ps>pe || is>ie) return null;
        TreeNode root = new TreeNode(postorder[pe]);
        int ri = hm.get(postorder[pe]);
        TreeNode leftchild = buildTreePostIn(inorder, is, ri-1, postorder, ps, ps+ri-is-1, hm);
        TreeNode rightchild = buildTreePostIn(inorder,ri+1, ie, postorder, ps+ri-is, pe-1, hm);
        root.left = leftchild;
        root.right = rightchild;
        return root;
    }
}
```