

Find the Least Common Ancestor of two nodes in a given Binary Tree

```
#include <stdio.h>
#include <stdlib.h>

struct BTNode
{
    int data;
    struct BTNode *left;
    struct BTNode *right;
};

struct BTNode *newNode(int data)
{
    struct BTNode *temp = (struct BTNode *)malloc(sizeof(struct BTNode));
    temp->data = data;
    temp->left = temp->right = NULL;
    return temp;
}

struct BTNode *RecursiveLCA(struct BTNode *root, int p, int q)
{
    if(!root) return root;
    if(root->data == p || root->data == q) return root;
    struct BTNode *left = RecursiveLCA(root->left, p, q);
    struct BTNode *right = RecursiveLCA(root->right, p, q);
    if(left && right)
        return root;
    return (left ? left: right);
}

int main()
{
    struct BTNode *root, *lca;
    root = newNode(25);
    root->left = newNode(10);
    root->right = newNode(30);
    root->left->left = newNode(5);
    root->left->right = newNode(15);
    root->left->right->left = newNode(12);
    lca = RecursiveLCA(root, 12, 30);
    printf("%d\n", lca ? lca->data: -1);
    return 0;
}
```

Time complexity: $O(n)$

Space complexity: $O(n)$