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

struct BinaryTreeNode {
    int key;
    struct BinaryTreeNode *left, *right;
};

struct BinaryTreeNode* newNodeCreate(int value)
{
    struct BinaryTreeNode* temp
        = (struct BinaryTreeNode*)malloc(
            sizeof(struct BinaryTreeNode));
    temp->key = value;
    temp->left = temp->right = NULL;
    return temp;
}

struct BinaryTreeNode*
searchNode(struct BinaryTreeNode* root, int target)
{
    if (root == NULL || root->key == target) {
        return root;
    }
    if (root->key < target) {
        return searchNode(root->right, target);
    }
    return searchNode(root->left, target);
}

struct BinaryTreeNode*
insertNode(struct BinaryTreeNode* node, int value)
{
    if (node == NULL) {
        return newNodeCreate(value);
    }
    if (value < node->key) {
        node->left = insertNode(node->left, value);
    }
    else if (value > node->key) {
        node->right = insertNode(node->right, value);
    }
    return node;
}

void postOrder(struct BinaryTreeNode* root)
{
    if (root != NULL) {
        postOrder(root->left);
    }
}

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        postOrder(root->right);
        printf(" %d ", root->key);
    }
}

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void inOrder(struct BinaryTreeNode* root)
{
    if (root != NULL) {
        inOrder(root->left);
        printf(" %d ", root->key);
        inOrder(root->right);
    }
}

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void preOrder(struct BinaryTreeNode* root)
{
    if (root != NULL) {
        printf(" %d ", root->key);
        preOrder(root->left);
        preOrder(root->right);
    }
}

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struct BinaryTreeNode* findMin(struct BinaryTreeNode* root)
{
    if (root == NULL) {
        return NULL;
    }
    else if (root->left != NULL) {
        return findMin(root->left);
    }
    return root;
}

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struct BinaryTreeNode* delete (struct BinaryTreeNode* root,
                               int x)
{
    if (root == NULL)
        return NULL;

    if (x > root->key) {
        root->right = delete (root->right, x);
    }
    else if (x < root->key) {
        root->left = delete (root->left, x);
    }
    else {
        if (root->left == NULL && root->right == NULL) {
            free(root);
            return NULL;
        }
    }
}

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    }
    else if (root->left == NULL
        || root->right == NULL) {
        struct BinaryTreeNode* temp;
        if (root->left == NULL) {
            temp = root->right;
        }
        else {
            temp = root->left;
        }
        free(root);
        return temp;
    }
    else {
        struct BinaryTreeNode* temp
            = findMin(root->right);
        root->key = temp->key;
        root->right = delete (root->right, temp->key);
    }
}
return root;
}

```

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int main()
{

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    struct BinaryTreeNode* root = NULL;

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    root = insertNode(root, 50);
    insertNode(root, 30);
    insertNode(root, 20);
    insertNode(root, 40);
    insertNode(root, 70);
    insertNode(root, 60);
    insertNode(root, 80);

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    if (searchNode(root, 60) != NULL) {
        printf("60 found");
    }
    else {
        printf("60 not found");
    }

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    printf("\n");

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    postOrder(root);
    printf("\n");

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```
preOrder(root);  
printf("\n");
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```
inOrder(root);  
printf("\n");
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```
struct BinaryTreeNode* temp = delete (root, 70);  
printf("After Delete: \n");  
inOrder(root);
```

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return 0;  
}
```