// Binary Tree in C++

#include <stdlib.h>

#include <iostream>

using namespace std;

struct node {

int data;

struct node \*left;

struct node \*right;

};

// New node creation

struct node \*newNode(int data) {

struct node \*node = (struct node \*)malloc(sizeof(struct node));

node->data = data;

node->left = NULL;

node->right = NULL;

return (node);

}

// Traverse Preorder

void traversePreOrder(struct node \*temp) {

if (temp != NULL) {

cout << " " << temp->data;

traversePreOrder(temp->left);

traversePreOrder(temp->right);

}

}

// Traverse Inorder

void traverseInOrder(struct node \*temp) {

if (temp != NULL) {

traverseInOrder(temp->left);

cout << " " << temp->data;

traverseInOrder(temp->right);

}

}

// Traverse Postorder

void traversePostOrder(struct node \*temp) {

if (temp != NULL) {

traversePostOrder(temp->left);

traversePostOrder(temp->right);

cout << " " << temp->data;

}

}

int main() {

struct node \*root = newNode(1);

root->left = newNode(2);

root->right = newNode(3);

root->left->left = newNode(4);

cout << "preorder traversal: ";

traversePreOrder(root);

cout << "\nInorder traversal: ";

traverseInOrder(root);

cout << "\nPostorder traversal: ";

traversePostOrder(root);

}