**DSC LAB – {7}**

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3-MCA B

**CODE :**

#include <stdio.h>

struct node {

int data;

struct node \*left;

struct node \*right;

};

int found = 0;

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);

}

void preorder(struct node \*root) {

if (root != NULL) {

printf("%d ", root->data);

preorder(root->left);

preorder(root->right);

}

}

void inorder(struct node \*root) {

if (root != NULL) {

inorder(root->left);

printf("%d ", root->data);

inorder(root->right);

}

}

void search(struct node \*root, int src) {

if (root != NULL) {

search(root->left,src);

if(root->data == src)

{

found = 1;

}

search(root->right,src);

}

}

void postorder(struct node \*root) {

if (root != NULL) {

postorder(root->left);

postorder(root->right);

printf("%d ", root->data);

}

}

int main() {

int src;

struct node \*root = newNode(27);

root->left = newNode(14);

root->right = newNode(35);

root->left->left = newNode(10);

root->left->right = newNode(19);

root->right->left = newNode(31);

root->right->right = newNode(42);

int choice;

printf("Menu:\n");

printf("1. Preorder Traversal\n");

printf("2. Inorder Traversal\n");

printf("3. Postorder Traversal\n");

printf("4. Search a number\n");

printf("4. Exit\n");

do {

printf("\nEnter your choice: ");

scanf("%d", &choice);

switch (choice) {

case 1:

printf("\nPreorder Traversal: ");

preorder(root);

break;

case 2:

printf("\nInorder Traversal: ");

inorder(root);

break;

case 3:

printf("\nPostorder Traversal: ");

postorder(root);

break;

case 4:

printf("enter the no to search ");

scanf("%d", &src);

found = 0;

search(root,src);

if(found == 1){

printf("element found");

}

else printf("element not found");

break;

case 5:

printf("\nExiting program...\n");

break;

default:

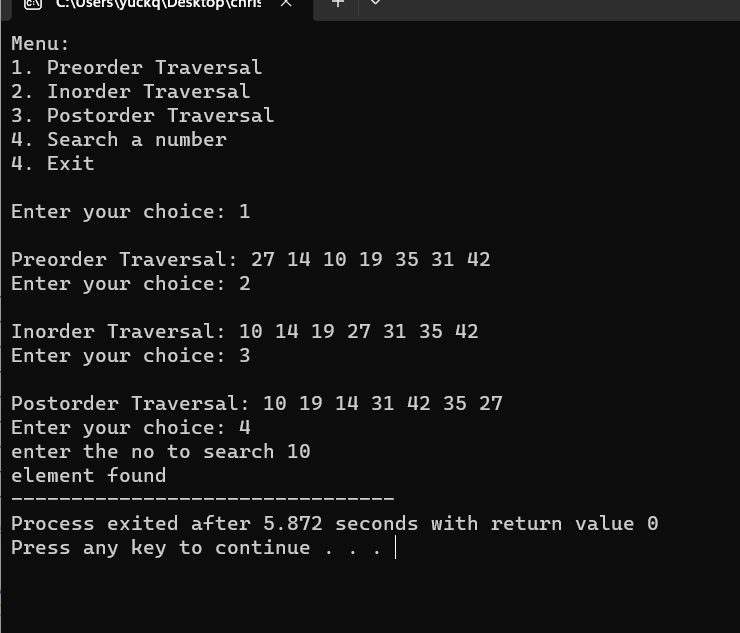
printf("\nInvalid choice. Please try again.\n");

}

} while (choice != 4);

return 0;

}**OUTPUT :**

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