**Aim:- Write a program which create binary search tree.**

#include <stdio.h>

#include <stdlib.h>

struct node {

int key;

struct node \*left, \*right;

};

struct node \*newNode(int item) {

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

temp->key = item;

temp->left = temp->right = NULL;

return temp;

}

void inorder(struct node \*root) {

if (root != NULL) {

inorder(root->left);

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

inorder(root->right);

}

}

struct node \*insert(struct node \*node, int key) {

if (node == NULL) return newNode(key);

if (key < node->key)

node->left = insert(node->left, key);

else

node->right = insert(node->right, key);

return node;

}

struct node \*minValueNode(struct node \*node) {

struct node \*current = node;

while (current && current->left != NULL)

current = current->left;

return current;

}

struct node \*deleteNode(struct node \*root, int key) {

if (root == NULL) return root;

if (key < root->key)

root->left = deleteNode(root->left, key);

else if (key > root->key)

root->right = deleteNode(root->right, key);

else {

if (root->left == NULL) {

struct node \*temp = root->right;

free(root);

return temp;

} else if (root->right == NULL) {

struct node \*temp = root->left;

free(root);

return temp;

}

struct node \*temp = minValueNode(root->right);

root->key = temp->key;

root->right = deleteNode(root->right, temp->key);

}

return root;

}

int main() {

struct node \*root = NULL;

root = insert(root, 8);

root = insert(root, 3);

root = insert(root, 1);

root = insert(root, 6);

root = insert(root, 7);

root = insert(root, 10);

root = insert(root, 14);

root = insert(root, 4);

printf("Inorder traversal: ");

inorder(root);

printf("\nAfter deleting 10\n");

root = deleteNode(root, 10);

printf("Inorder traversal: ");

inorder(root);

}

Output

Inorder traversal: 1 -> 3 -> 4 -> 6 -> 7 -> 8 -> 10 -> 14 ->

After deleting 10

Inorder traversal: 1 -> 3 -> 4 -> 6 -> 7 -> 8 -> 14 ->

Process returned 0 (0x0) execution time : 0.875 s

Press any key to continue.