**PRACTICAL NO. 7**

AIM: To write a program for menu-driven program to implement Binary Tree Operations.

a. Insert b. Traversal c. Search

PROGRAM:

#include<stdio.h>

#include<stdlib.h>

struct tree

{

int data;

struct tree \*l,\*r;

}\*root,\*q,\*t,\*p;

void insert()

{

int e;

struct tree \*n=(struct tree\*)malloc(sizeof(struct tree\*));

printf("Enter data element:");

scanf("%d",&e);

n->data=e;

n->l=NULL;

n->r=NULL;

if(root==NULL)

root=n;

else

{

p=root;

q=root;

while(p!=NULL)

{

q=p;

if(p->data>e)

p=p->l;

else

p=p->r;

}

if(q->data>e)

q->l=n;

else

q->r=n;

}

}

void ino(struct tree \*p)

{

if(p==NULL)

return;

else

{

ino(p->l);

printf("%5d",p->data);

ino(p->r);

}

}

void preo(struct tree \*p)

{

if(p==NULL)

return;

else

{

printf("%5d",p->data);

preo(p->l);

preo(p->r);

}

}

void posto(struct tree \*p)

{

if(p==NULL)

return;

else

{

posto(p->l);

posto(p->r);

printf("%5d",p->data);

}

}

void search()

{

int ele;

printf("Enter element to be searched:");

scanf("%d",&ele);

p=root;

while(p!=NULL)

{

if(p->data==ele)

{

printf("Element found!");

break;

}

else

{

if(ele>p->data)

p=p->r;

else

p=p->l;

}

}

if(p==NULL)

printf("Element not foumd!");

}

void main()

{

int o,ch;

do

{

printf("\nMENU\n1.Insert\n2.Inorder\n3.Preorder\n4.Postorder\n5.Search");

printf("\nEnter your choice:");

scanf("%d",&o);

switch(o)

{

case 1:insert();

break;

case 2:ino(root);

break;

case 3:preo(root);

break;

case 4:posto(root);

break;

case 5:search();

break;

}

printf("\n Enter 1 to continue:");

scanf("%d",&ch);

}while(ch==1);

}

MENU

1.Insert

2.Inorder

3.Preorder

4.Postorder

5.Search

Enter your choice:1

Enter data element:12

 Enter 1 to continue:1

MENU

1.Insert

2.Inorder

3.Preorder

4.Postorder

5.Search

Enter your choice:1

Enter data element:11

 Enter 1 to continue:1

MENU

1.Insert

2.Inorder

3.Preorder

4.Postorder

5.Search

Enter your choice:1

Enter data element:16

 Enter 1 to continue:1

MENU

1.Insert

2.Inorder

3.Preorder

4.Postorder

5.Search

Enter your choice:1

Enter data element:13

 Enter 1 to continue:1

MENU

1.Insert

Enter your choice:4

   11   13   16   12

 Enter 1 to continue:0