**Assignment No:-2.2**

**Assignment Name:- Implementation of programs based on In-Order,Pre-Order and Post-Order Traversal.**

**Roll No.:-152**

**Name:-Vaishnavi Pradip Patil.**

#include"iostream.h"

#include"conio.h"

class NODE

{

public:

int data;

NODE \*left;

NODE \*right;

};

class TREE

{

public:

NODE \*root;

TREE();

void ADD(int);

void INORD\_VIEW(NODE \*);

void PREORD\_VIEW(NODE \*);

void POSTORD\_VIEW(NODE \*);

void MENU();

};

TREE::TREE()

{

root=NULL;

}

void TREE::ADD(int ele)

{

NODE \*NN;

NN=new NODE();

NN->data=ele;

NN->left=NULL;

NN->right=NULL;

if(root==NULL)

{

root=NN;

}

else

{

NODE \*ptr = root;

NODE \*par = NULL;

while(ptr != NULL)

{

par=ptr;

if(ele<ptr->data)

ptr=ptr->left;

else

ptr=ptr->right;

}

if(ele<par->data)

par->left=NN;

else

par->right=NN;

}

}

void TREE::INORD\_VIEW(NODE \*ptr)

{

if(ptr != NULL)

{

INORD\_VIEW(ptr->left);

cout<<ptr->data<<" ";

INORD\_VIEW(ptr->right);

}

}

void TREE::PREORD\_VIEW(NODE \*ptr)

{

if(ptr != NULL)

{

cout<<ptr->data<<" ";

PREORD\_VIEW(ptr->left);

PREORD\_VIEW(ptr->right);

}

}

void TREE::POSTORD\_VIEW(NODE \*ptr)

{

if(ptr != NULL)

{

POSTORD\_VIEW(ptr->left);

POSTORD\_VIEW(ptr->right);

cout<<ptr->data<<" ";

}

}

void TREE::MENU()

{

int ele,opt;

do

{

cout<<endl<<"------------------------------";

cout<<endl<<"1 ADD Node";

cout<<endl<<"2 In-Order View";

cout<<endl<<"3 Pre-Order View";

cout<<endl<<"4 Post-Order View";

cout<<endl<<"5 for EXIT";

cout<<endl<<"-------------------------------";

cout<<endl<<"Enter your choice: ";

cin>>opt;

switch(opt)

{

case 1:

cout<<endl<<"Enter element: ";

cin>>ele;

ADD(ele);

break;

case 2:

INORD\_VIEW(root);

break;

case 3:

PREORD\_VIEW(root);

break;

case 4:

POSTORD\_VIEW(root);

break;

case 5:

return;

}

}while(1);

}

void main()

{

int ele;

clrscr();

TREE obj;

obj.MENU();

getch();

}