ASSIGNMENT NO. 06

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CLASS :- SE IT

BATCH :- A

ROLL NO. 14

#include<iostream>

using namespace std;

struct node

{

int data,lf,rf;

node \*l,\*r;

};

class Tbt

{

node \*head,\*root;

public:

Tbt();

node \*getroot();

void create();

void inorder();

void preorder();

};

Tbt::Tbt()

{

root=NULL;

}

node\* Tbt::getroot()

{

return root;

}

void Tbt::create()

{

int n,d;

node \*t,\*p;

cout<<"Enter number of nodes :";

cin>>n;

head=new node;

head->l=head->r=head;

head->lf=head->rf=0;

for(int i=0;i<n;i++)

{

t=new node;

cout<<"Enter the data :"<<i+1<<endl;

cin>>t->data;

t->l=t->r=NULL;

t->lf=t->rf=0;

if(root==NULL)

{

root=t;

head->l=root;

root->l=root->r=head;

root->lf=root->rf=0;

}

else

{

p=root;

while(1)

{

if(t->data<p->data)

{

if(p->lf==0)

{

t->l=p->l;

p->l=t;

p->lf=1;

t->r=p;

break;

}

else

{

p=p->l;

}

}

else

{

if(p->rf==0)

{

t->r=p->r;

p->r=t;

p->rf=1;

t->l=p;

break;

}

else

{

p=p->r;

}

}

}

}

}

}

void Tbt::inorder()

{

cout<<"Inorder Traversal is :"<<endl;

node \*p;

p=root;

do

{

while(p->lf!=0)

p=p->l;

cout<<p->data<<endl;

while(p->rf==0)

{

p=p->r;

if(p==head)

return;

cout<<p->data<<endl;

}

p=p->r;

}

while(p!=head);

}

void Tbt::preorder()

{

cout<<"Preorder Traversal is :"<<endl;

node \*p=root;

do

{

while(p->lf==1)

{

cout<<p->data<<endl;;

p=p->l;

}

cout<<p->data<<endl;

while(p->rf==0)

{

p=p->r;

if(p==head)

return;

}

p=p->r;

}

while(p!=head);

}

int main()

{

Tbt x;

x.create();

x.inorder();

x.preorder();

}

\*\*\*\*\*OUTPUT\*\*\*\*\*

Enter number of nodes :5

Enter the data :1

10

Enter the data :2

20

Enter the data :3

30

Enter the data :4

40

Enter the data :5

50

Inorder Traversal is :

10

20

30

40

50

Preorder Traversal is :

10

20

30

40

50