Tree Traversal

#include<iostream.h>

#include<conio.h>

#include<process.h>

#define max 30

struct node

{ int data;

node \*left;

node \*right;

} \*root=NULL, \*temp, \*t;

node \*s[max];

int top;

void preorder(void)

{ cout<<"\nTree (Preorder traversal)\n";

top=0;

s[top]=NULL;

temp=root;

while(temp!=NULL)

{ cout<<temp->data<<" ";

if(temp->right!=NULL)

{ top++;

s[top]=temp->right;

}

if(temp->left!=NULL)

{ temp=temp->left;

}

else

{ temp=s[top];

top--;

}

}

}

void inorder(void)

{ cout<<"\nTree (Inorder traversal)\n";

top=0;

s[top]=NULL;

temp=root;

again:

while(temp!=NULL)

{ top++;

s[top]=temp;

temp=temp->left;

}

temp=s[top];

top--;

while(temp!=NULL)

{ cout<<temp->data<<" ";

if(temp->right!=NULL)

{ temp=temp->right;

goto again;

}

temp=s[top];

top--;

}

}

void postorder(void)

{ cout<<"Tree (Postordertraversal)\n";

struct tnode

{ char status;

node \*p;

} \*ptr, \*myptr;

tnode \*s[max];

top=0;

s[top]=NULL;

temp=root;

myptr=NULL;

again:

while(temp!=NULL)

{ ptr=new tnode;

ptr->p=temp;

ptr->status='p';

top++;

s[top]=ptr;

if(temp->right!=NULL)

{ ptr=new tnode;

ptr->p=temp->right;

ptr->status='n';

top++;

s[top]=ptr;

}

temp=temp->left;

}

myptr=s[top];

top--;

temp=myptr->p;

while(myptr->status=='p')

{ cout<<temp->data<<" ";

myptr=s[top];

top--;

temp=myptr->p;

}

if(myptr->status=='n')

{ myptr->status='p';

temp=myptr->p;

goto again;

}

}

void insert()

{ temp=new node;

cout<<"\nEnter the data:\t";

cin>>temp->data;

temp->left=NULL;

temp->right=NULL;

if(root==NULL)

{ root=temp;

goto fin;

}

t=root;

while(1)

{ if((temp->data)<=(t->data))

{ if((t->left)==NULL)

{ t->left=temp;

goto fin;

}

else

{ t=t->left;

}

}

else if((temp->data)>(t->data))

{ if((t->right)==NULL)

{ t->right=temp;

goto fin;

}

else

{ t=t->right;

}

}

}

fin:

}

void main()

{ char ch;

clrscr();

while(1)

{ cout<<"\n1)Insert\n2)Preorder\n3)Inorder\n4)Postorder\n5)Exit";

ch=getch();

cout<<ch;

if(ch=='1')

{ insert();

}

else if(ch=='2')

{ preorder();

}

else if(ch=='3')

{ inorder();

}

else if(ch=='4')

{ postorder();

}

else if(ch=='5')

{ exit(1);

}

else

{ cout<<"\nWrong choise!!\n\n";

}

}

}

