

Binary search

```
#include<stdio.h>

struct node
{
    int data;
    struct node *left,*right;
}*root=NULL,*newnode;

struct node* insert(struct node*,int);

void inorder(struct node *);
void preorder(struct node *);
void postorder(st # ruct node *);

struct node* insert(struct node *root,int ele)
{
    if(root==NULL) #
    {
        newnode=(struct node*)malloc(sizeof(struct node));
        newnode->data=ele;
        newnode->left= NULL;
        newnode->right=NULL;
        return (newnode);
    }
    else if(ele>root->data)
        root->right=insert(root->right,ele);
    else if(ele<root->data)
        root->left=insert(root->left,ele);
    return (root);
}

void inorder(struct node *root)
{
    if(root!=NULL)
    {
```

```
inorder(root->left);  
    printf("%d\t",root->data);  
    inorder(root->right);  
}
```

```
}  
  
void preorder(struct node *root)  
{  
    if(root!=NULL)  
    {  
        printf("%d\t",root->data);  
        preorder(root->left);  
        preorder(root->right);  
    }  
}
```

```
}  
  
void postorder(struct node *root)  
{  
    if(root!=NULL)  
    {  
        postorder(root->left);  
        postorder(root->right);  
        printf("%d\t",root->data);  
    }  
}
```

```
}  
  
int main()  
{  
    int ele,op,n;  
    do
```

```

{
printf("\n***Main Menu*\n");
printf("1.Insert\n2.Display-Inorder\n3.Display-Postorder\n4.Display-Preorder\n5.Exit");
printf("\nEnter your option");
scanf("%d",&op);
switch(op)
{
case 1: printf("\nEnter element to insert");
scanf("%d",&ele);
root=insert(root,ele);
break;

case 2: inorder(root);break;
case 3:postorder(root);break;
case 4:preorder(root); break;
case 5: exit(0);
default: printf(" Please enter option between 1 to 5");
}
}while(op>0 && op<=5);

}

```

Output:

```
"C:\Users\91911\OneDrive\Documents\Exams\ptr\binary search in ds.exe"
3.Display-Postorder
4.Display-Preorder
5.Exit
Enter your option1
Enter element to insert3
***Main Menu*
1.Insert
2.Display-Inorder
3.Display-Postorder
4.Display-Preorder
5.Exit
Enter your option4
14 3
***Main Menu*
1.Insert
2.Display-Inorder
3.Display-Postorder
4.Display-Preorder
5.Exit
Enter your option3
3 14
***Main Menu*
1.Insert
2.Display-Inorder
3.Display-Postorder
4.Display-Preorder
5.Exit
Enter your option
```