# LAB 10 BST

CHIRAG
1BM18CS039

```
#include <stdio.h>
#include <stdlib.h>

typedef struct Node{
        struct Node *left;
        int data;
        struct Node *right;
} *node;

node getnode(int item){
    node temp = (node) malloc(sizeof(struct Node));
    temp->left = NULL;
    temp->data = item;
    temp->right = NULL;
    return temp;
}

node insert(node root, int ele){
    if (root == NULL)
        return getnode(ele);
    else if (ele < root->data)
        root->left = insert(root->left, ele);
        else if (ele > root->data)
            root->right = insert(root->right, ele);
    return root;
}
```

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```
void inorder (node root) {
    if (root == NULL)
        return;
    inorder (root->left);
    printf ("%d ", root->data);
    inorder(root->right);
}

void preorder (node root) {
    if(root == NULL)
      return;
    printf ("%d", root->data);
    preorder(root->left);
    preorder(root->right);
}

void postorder (node root) {
    if (root==NULL)
      return;
    postorder (root->left);
    postorder (root->right);
    printf ("%d", root->data);
}

int main() {
    node root = NULL;
    int c, ch=1;
    while (ch!=5) {
        printf("\n 1. Insert \n 2-Preorder \n 3. Inorder \n 4
                Postorder \n* 5 ~~exit~~ exit \n");
        scanf("%d", &ch);
```

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```
switch(ch){
    case 1:
        printf("Element:");
        scanf("%d", &e);
        root = insert(root, e);
        break;

    case 2:
        preorder(root);
        break;

    case 3:
        inorder(root);
        break;

    case 4:
        postorder(root);
        break;

    case 5:
        printf("Exiting.");
        exit(1);

    default:
        printf("wrong input!");
    }
  }
}
```