

//Aim 13(a): Write a program in C to create a Binary Search Tree of Integers

```
#include <stdio.h>
#include <stdlib.h>
typedef struct node_Binary_Search_Tree
{
    int data;
    struct node_Binary_Search_Tree *left,*right;
}BST;
BST *root,*temp,*ttemp;
```

```
void addnode(int node,int val)
```

```
{
    if(node==1)
    {
        root=(BST*)malloc(sizeof(BST));
        root->data=val;
        root->left=root->right=NULL;
    }
    else
    {
        BST *p;
        temp=root;
        while(temp!=NULL)
        {
            ttemp=temp;
            if(temp->data>val)
                temp=temp->left;
            else
                temp=temp->right;
        }
        p=(BST*)malloc(sizeof(BST));
        p->data=val;
        p->left=p->right=NULL;
        if(ttemp->data>val)
            ttemp->left=p;
        else
            ttemp->right=p;
    }
}

void in_order(BST *p)
{
    if(p!=NULL)
    {
        in_order(p->left);
        printf("%d\t",p->data);
        in_order(p->right);
    }
}
```

```

void main()
{
    int n,i,val;
    clrscr();
    printf("\nEnter total number of nodes in a Binary Search Tree: ");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        printf("\nEnter element %d of BST: ",i);
        scanf("%d",&val);
        addnode(i,val);
    }
    in_order(root);
    printf("\nRoot node value is %d\n",root->data);
    getch();
}

```

Output 13(A):

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Enter total number of nodes in a Binary Search Tree: 5
Enter element 1 of BST: 60
Enter element 2 of BST: 70
Enter element 3 of BST: 100
Enter element 4 of BST: 190
Enter element 5 of BST: 2
2      60      70      100      190
Root node value is 60

```