Binary Search Tree

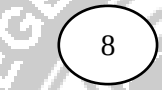
Insertion:

- To insert the element X into the tree T, proceed the find function.
- If X is found, do nothing. Otherwise insert X at the last spot on the path traversal.

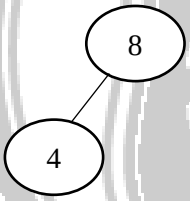
Example

To insert 8, 4, 1, 6, 5, 7, 10

First element 8 is considered as root

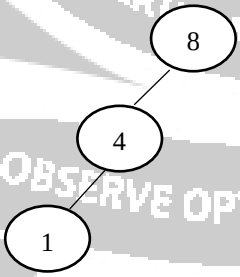


4<8, traverse towards left



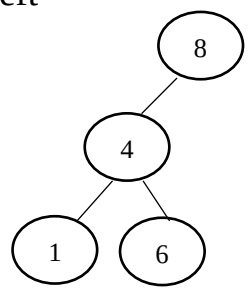
1<8 traverse towards left

1<4 traverse towards left



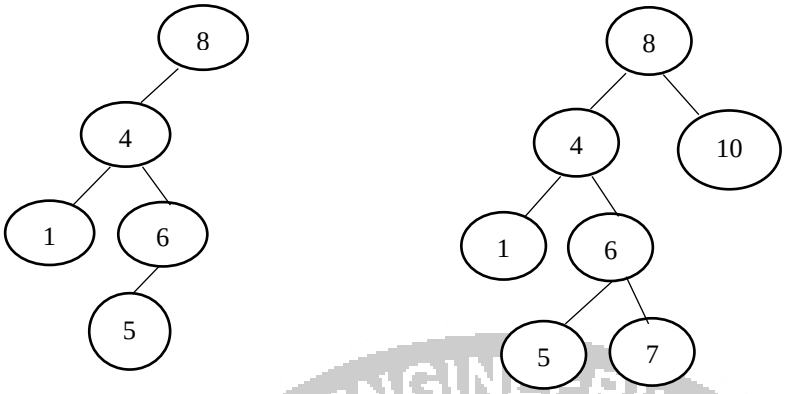
To insert element 6,

6<8. Traverse towards left



6>4, place it as right child of 4

Similarly the rest of the elements are placed



Routine

```
SearchTree Insert(ElementType X, SearchTree T)
{
if(T==NULL)
T=malloc(sizeof(struct TreeNode));
if(T=+NULL)
FatalError("Out of space!!");
else
T→Element=X;
T→Left=NULL;
T→Right=NULL;
}
else
if(X> T→Element);
T→Right=Insert(x, T→Right);
if(X< T→Element);
T→Left=Insert(x, T→Leftt);
return T;
}
```