

二叉树的链表表示法实现

本程序实际上是构建了一颗二叉排序树，程序最后输出构建数的中序遍历。
代码实现：

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

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typedef int DataType;

typedef struct BTree{
    DataType data;
    struct BTree *Tleft;
    struct BTree *Tright;
}*BTree;

BTree CreateTree();
BTree insert(BTree root, DataType data);
void InBTree(BTree root);

int main(){
    BTree root = NULL;
    root = CreateTree();
    InBTree(root);
    printf("\n");
    return 0;
}

BTree CreateTree(){
    BTree root = NULL;
    DataType temp = 0;
    printf("Input data, if you want to exit, please input 0:\n");
    scanf("%d", &temp);
    while(temp != 0){
        root = insert(root, temp);
        scanf("%d", &temp);
    }

    return root;
```

```
}

BTree insert(BTree root, DataType data){
    BTree ptr = root;
    BTree tempNode;
    BTree newNode = (BTree)malloc(sizeof(struct BTree));
    newNode->data = data ;
    newNode->Tleft = NULL;
    newNode->Tright = NULL;

    if(ptr == NULL){
        return newNode;
    }else{
        while(ptr != NULL){
            tempNode = ptr;
            if(ptr->data >= data){
                ptr = ptr->Tleft;
            }else{
                ptr = ptr->Tright;
            }
        }

        if(tempNode->data >= data){
            tempNode->Tleft = newNode;
        }else{
            tempNode->Tright = newNode;
        }
    }
    return root;
}

void InBTree(BTree root){
    if(root != NULL){
        InBTree(root->Tleft);
        printf("%d ", root->data);
        InBTree(root->Tright);
    }
}
```

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