

# Rajalakshmi Engineering College

Name: Darshan Abinav R.K  
Email: 241501039@rajalakshmi.edu.in  
Roll no: 241501039  
Phone: 7010796406  
Branch: REC  
Department: I AI & ML FA  
Batch: 2028  
Degree: B.E - AI & ML

Scan to verify results



## NeoColab\_REC\_CS23231\_DATA STRUCTURES

### REC\_DS using C\_Week 5\_COD\_Question 5

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

In his computer science class, John is learning about Binary Search Trees (BST). He wants to build a BST and find the maximum value in the tree.

Help him by writing a program to insert nodes into a BST and find the maximum value in the tree.

##### ***Input Format***

The first line of input consists of an integer N, representing the number of nodes in the BST.

The second line consists of N space-separated integers, representing the values of the nodes to insert into the BST.

##### ***Output Format***

The output prints the maximum value in the BST.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 5  
10 5 15 2 7

Output: 15

### **Answer**

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

struct TreeNode {
    int data;
    struct TreeNode* left;
    struct TreeNode* right;
};

struct TreeNode* createNode(int key) {
    struct TreeNode* newNode = (struct TreeNode*)malloc(sizeof(struct
TreeNode));
    newNode->data = key;
    newNode->left = newNode->right = NULL;
    return newNode;
}

struct TreeNode* insert(struct TreeNode* root, int key) {
    if (root==NULL){
        struct TreeNode* newNode=createNode(key);
        root=newNode;
    }
    else if(root ->data >= key ){
        root->left=insert( root->left, key);
    }
    else if(root ->data < key ){
        root->right=insert( root->right, key);
    }
    return root;
}
```

```

    }

    int findMax(struct TreeNode* root) {
        if (root->right == NULL){
            return root->data;
        }
        else{
            return findMax(root->right);
        }
    }

    int main() {
        int N, rootValue;
        scanf("%d", &N);

        struct TreeNode* root = NULL;

        for (int i = 0; i < N; i++) {
            int key;
            scanf("%d", &key);
            if (i == 0) rootValue = key;
            root = insert(root, key);
        }

        int maxVal = findMax(root);
        if (maxVal != -1) {
            printf("%d", maxVal);
        }

        return 0;
    }

```

**Status :** Correct

**Marks :** 10/10