

# Rajalakshmi Engineering College

Name: I Mohammed Hamza  
Email: 240701326@rajalakshmi.edu.in  
Roll no: 240701326  
Phone: 7358328592  
Branch: REC  
Department: I CSE AH  
Batch: 2028  
Degree: B.E - CSE

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) return createNode(key);
    if (key < root->data) root->left = insert(root->left, key);
    else root->right = insert(root->right, key);
    return root;
}

int findMax(struct TreeNode* root) {
    if (root == NULL) return -1;
    while (root->right != NULL) root = root->right;
    return root->data;
}
```

```
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