# Rajalakshmi Engineering College

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Branch: REC

Department: I AI & DS FB

Batch: 2028

Degree: B.E - AI & DS



## NeoColab\_REC\_CS23231\_DATA STRUCTURES

REC\_DS using C\_Week 5\_COD\_Question 2

Attempt : 1 Total Mark : 10 Marks Obtained : 10

Section 1: Coding

#### 1. Problem Statement

Mike is learning about Binary Search Trees (BSTs) and wants to implement various operations on them. He wants to write a basic program for creating a BST, inserting nodes, and printing the tree in the pre-order traversal.

Write a program to help him solve this program.

## Input Format

The first line of input consists of an integer N, representing the number of values to insert into the BST.

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

### Output Format

The output prints the space-separated values of the BST in the pre-order traversal.

Refer to the sample output for formatting specifications.

```
Sample Test Case
```

```
Input: 5
    31524
    Output: 3 1 2 5 4
    Answer
    #include <stdio.h>
#include <stdlib.h>
    struct Node {
      int data:
      struct Node* left;
      struct Node* right;
    };
    struct Node* createNode(int value) {
      struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));
      newNode->data = value;
return newNode;
      newNode->left = newNode->right = NULL;
    // You are using GCC
      //Type your code here
    //Type your code here
    struct Node* insert(struct Node* root, int value) {
      if(root==NULL){
        return createNode(value);
      if(value<root->data){
        root->left=insert(root->left,value);
      }else if(value>root->data){
       root->right=insert(root->right,value);
```

```
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      return root;
    void printPreorder(struct Node* node) {
      if(node==NULL)return;
      printf("%d ",node->data);
      printPreorder(node->left);
      printPreorder(node->right);
    int main() {
int n;
      scanf("%d", &n);
      for (int i = 0; i < n; i++) {
        int value;
        scanf("%d", &value);
        root = insert(root, value);
      }
      printPreorder(root);
      return 0;
                                                                    Marks: 10/10
    Status: Correct
```

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