

BST, Leetcode 1, 2
Emitted
19/2/24

1) write a program

a) to construct BST

b) traverse the tree using inorder, preorder

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

```
#include <stdlib.h> display the elements in the tree
```

```
struct Node {
```

```
    int data;
```

```
    struct Node * left;
```

```
    struct Node * right;
```

```
};
```

```
struct Node * createNode (int data) {
```

```
    struct Node * newNode = (struct Node *) malloc
```

```
    (sizeof (struct Node));
```

```
    newNode->data = data;
```

```
    newNode->left = NULL;
```

```
    newNode->right = NULL;
```

```
    return newNode;
```

```
}
```

```
struct Node * insert (struct Node * root, int data) {
```

```
    if (root == NULL) {
```

```
        return createNode (data);
```

```
    }
```

```
    if (data < root->data) {
```

```
        root->left = insert (root->left, data);
```

```
    }
```

```
    else if (data > root->right, data);
```

```
    }
```

```
    return root;
```

```
}
```


void inOrder (struct Node* root) {

if (root != NULL) {

inOrder (root → left);

printf ("%d", root → data);

inOrder (root → right);

}

}

void preOrder (struct Node* root) {

if (root != NULL) {

printf ("%d", root → data);

preOrder (root → left);

preOrder (root → right);

}

}

void PostOrder (struct Node* Node) {

if (root != NULL) {

PostOrder (root → left);

PostOrder (root → right);

printf ("%d", root → data);

}

}

void display (struct Node* root) {

printf ("Inorder Traversal: ");

inOrder (root);

printf ("Preorder Traversal: ");

preOrder (root);

printf ("Post-order Traversal: ");

postOrder (root);

printf ("\n");

}

//_

```

int main() {
    struct Node * root = NULL;
    int data, c;
    printf("1. Enter data into BST \n 2. To stop \n");
    while (1) {
        printf("Enter choice: ");
        scanf("%d", &c);
        switch (c) {
            case 1:
                printf("Enter data: ");
                scanf("%d", &data);
                root = insert(root, data);
                break;
            case 2:
                display(root);
                exit(root);
                exit(0);
        }
    }
    return 0;
}

```

y.

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