Assignment - 4

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Course code : CSA 0389

Course name : DATA STRUCTURE

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Assignment-4 NAME:-G.Rahul
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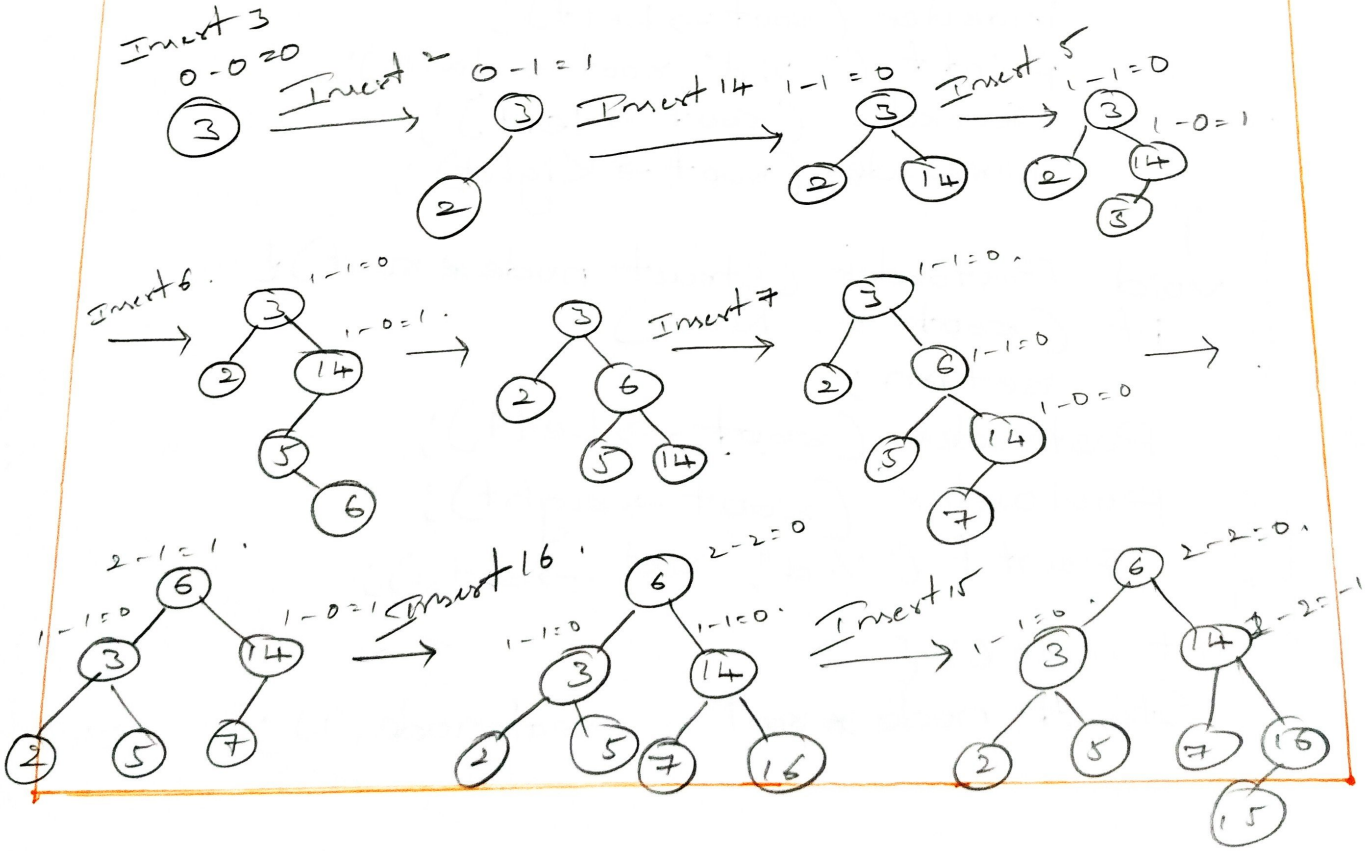
1. Develop a C program to implement the tree traversals (Inorder, Preorder, Postorder).

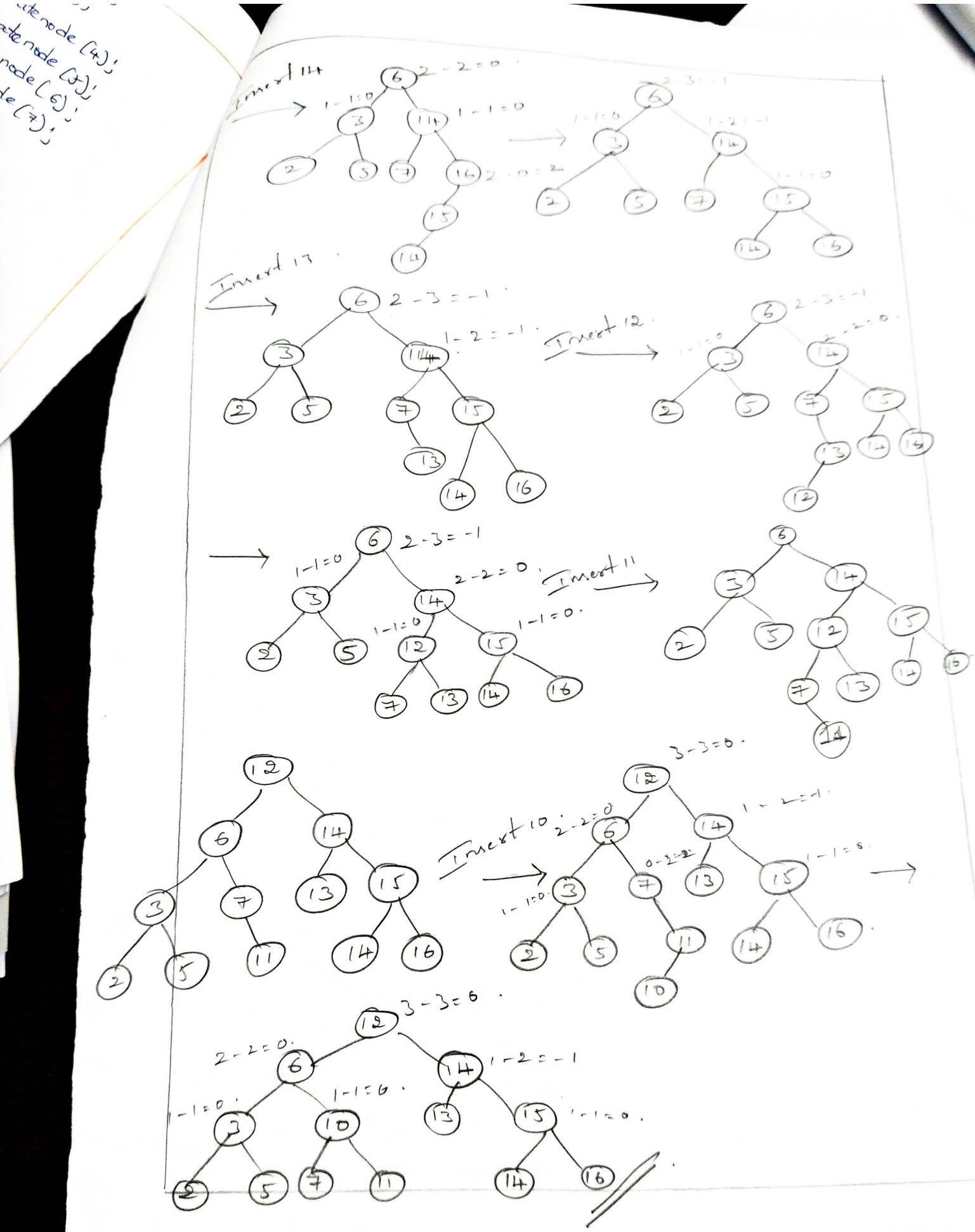
```
#include <stdio.h>
#include <stdlib.h>
Struct node {
    int data;
    Struct node * left;
    Struct node * Right;
};
Struct node * Create node (int data) {
    Structnode * newnode = (Struct node *) malloc
(Size of [Struct node]);
    newnode → data = data;
    newnode → left = NULL;
    newnode → Right = NULL;
    return new node;
}
void inorder (Struct node * root) {
    if (root == NULL)
    return;
    inorder (root → Left);
    Printf (" %d", root → data);
    Preorder (root → left);
    preorder (root → Right);
}
void Postorder (Struct node * root) {
    if (root == NULL)
    return;
    Postorder (root → Left);
    postorder (root → right);
    Printf (" %d", root → data);
}
int main () {
    Struct node * root = createnode ();
```

```
    root->Left = Createnode(2);
    root->Right = Createnode(3);
    root->Left->Left = Createnode(4);
    root->Left->Right = Createnode(5);
    root->Right->left = Createnode(6);
    root->Right->Right = Createnode(7);
    Printf("Inorder traversal: ");
    inorder(root);
    printf("\n");
    printf("Preorder traversal: ");
    Preorder(root);
    Printf("Postorder traversal:");
    Postorder(root);
    return 0;
}.
```

2. Construct AVL tree for the following elements 3,2,14,5,6,7 followed by 16 to 10 in reverse order.

3, 2, 14, 5, 6, 7, 16, 15, 14, 13, 12, 11, 10.




Insert 14
Insert 13
Insert 12
Insert 11
Insert 10