

Assignment - 4

Name : CH. Naga Anjali

Regno : 192372201

Dept : CSE-AT

P Course code : CSA0389

Course name : Data Structure for
Stack Overflow

Develop a C program to implement the tree traversal (Inorder, preorder, postorder).

```
#include <stdio.h>
#include <stdlib.h>
type of struct node {
    int data;
    struct node * left * right;
} node;

void preorder (node * root) {
    if (root == null) {
        return;
    }
    printf ("%d", root->data);
    preorder (root->left);
    preorder (root->right);
}

void inorder (node * root) {
    if (root == null) {
        return;
    }
    inorder (root->left);
    printf ("%d", root->data);
    inorder (root->right);
}

void postorder (node * root) {
    if (root == null)
```

```
... return; }
```

```
postorder (root → left);
```

```
postorder (root → right);
```

```
printf(".l.d", root → data);
```

```
}
```

```
int main() {
```

```
printf("preorder Tranversal:");
```

```
preorder (root);
```

```
printf("\n");
```

```
printf("Inorder Tranversal:");
```

```
inorder (root);
```

```
printf("\n");
```

```
printf("postorder Tranversal:");
```

```
preorder (root);
```

```
printf("\n");
```

```
return 0;
```

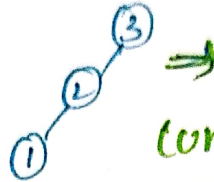
```
}
```

Construct AVL Tree for the following elements 3, 2, 1, 4, 5, 6, 7 followed by 10 to 16 in reverse order.

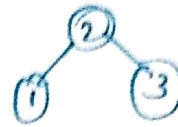
insert 3:



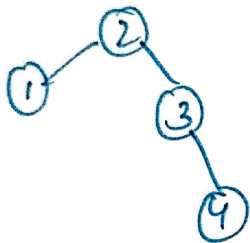
insert 2:



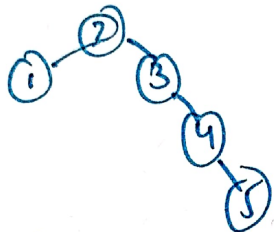
(unbalanced
rotate towards
right at 2)



insert 4:

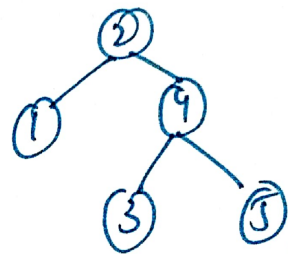


insert 5:



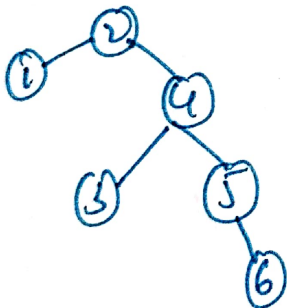
(unbalanced)

insert 5:

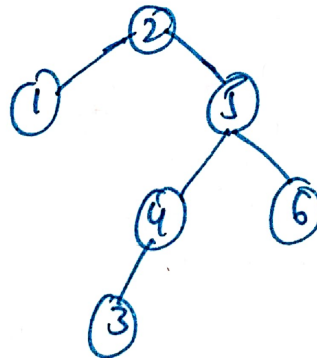


(balanced)

insert 6:



=>



insert 7:

