Assignment - 4

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Course Name : Datastructure

Course code : CSA0389

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Department : CSE-AI

Develop a C program to implement the tree traversal (Inorder, Preorder, Postorder).

```
#include <stdio.h>
#include <stdlib.h>
typedef 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)
```

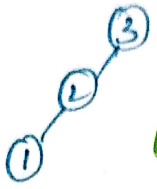
```
    return; }
    postorder (root → left);
    postorder (root → right);
    Printf(" %d", root → data);
}
int main() {
Printf(" Preorder Tranversal:");
Preorder (root);
Printf ("\n");
Printf("Inorder Tranversal:");
inorder (root);
Printf ("\n");
Printf (" postorder Tranversal:");
Preorder (root);
Print-f ("\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 :

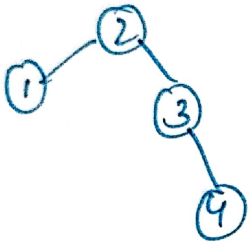
insert 2 :

insert 1 :

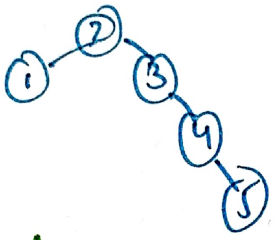


(unbalanced rotate towards right at 2)

insert 4 :

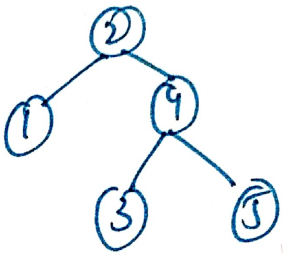


insert 5 :-



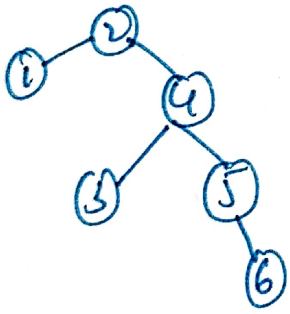
(unbalanced)

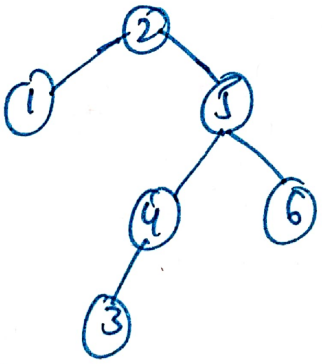
insert 5 :



(balanced)

insert 6 :





insert 7 :