**Name: Atharva Salitri** **Div: CSAI-B** **Batch: 2** **Roll No.: 37**

## Tree Traversal – Inorder, Preorder, Postorder

```
#include <stdio.h>
#include <stdlib.h>
struct node{
   int data;
   struct node *left;
   struct node *right;
};
struct node *root;
struct node *insert(struct node *r, int datatonode
{
   if (r == NULL) {
      r = (struct node *)malloc(sizeof(struct node));
      r->data = datatonode;
      r->left = NULL;
      r->right = NULL;
   }
   else if (datatonode < r->data)
      r->left = insert(r->left, datatonode);
   else
      r->right = insert(r->right, datatonode);
   return r;
}
void inOrder(struct node *r) {
   if (r != NULL) {
      inOrder(r->left);
      printf("%d ", r->data);
      inOrder(r->right);
   } }
void preOrder(struct node *r) {
   if (r != NULL) {
      printf("%d ", r->data);
      preOrder(r->left);
      preOrder(r->right);
   } }
void postOrder(struct node *r) {
   if (r != NULL)
   {
      postOrder(r->left);
      postOrder(r->right);
      printf("%d ", r->data);
   } }
int main()
   root = NULL;
   int number, value;
   printf("Enter the number of elements to be
inserted: ");
   scanf("%d", &number);
   for (int i = 0; i < number; i++) {
      printf("Element %d is ", i + 1);
      scanf("%d", &value);
      root = insert(root, value);  }
   printf("\nINRODER TARVERSAL\n");
   inOrder(root);
   printf("\n");
   printf("\nPREORDER TRAVERSAL \n");
   preOrder(root);
   printf("\n");
   printf("\nPOSTORDRER TRAVERSAL \n");
   postOrder(root);
   printf("\n");
   return 0;
}
```

```
Enter the number of elements to be inserted: 7
Element 1 is 10
Element 2 is 5
Element 3 is 20
Element 4 is 3
Element 5 is 9
Element 6 is 15
Element 7 is 25

INRODER TARVERSAL
3 5 9 10 15 20 25

PREORDER TRAVERSAL
10 5 3 9 20 15 25

POSTORDRER TRAVERSAL
3 9 5 15 25 20 10
```