

NAME VALLURU VARSHINI

REG NO 230701369

EX 8 : PERFORMING TREE TRAVERSAL TECHNIQUES

Tree traversal

```
#include <stdio.h>
#include <stdlib.h>
struct node
{
    struct node *left;
    int element;
    struct node *right;
};
typedef struct node Node;
Node *Insert(Node *Tree, int e);
void Inorder(Node *Tree);
void Preorder(Node *Tree);
void Postorder(Node *Tree);
int main()
{
    Node *Tree = NULL;
    int n, i, e, ch;
    printf("Enter number of nodes in the tree : ");
    scanf("%d", &n);
    printf("Enter the elements :\n");
    for (i = 1; i <= n; i++)
    {
        scanf("%d", &e);
        Tree = Insert(Tree, e);
    }
    do
    {
        printf("1. Inorder \n2. Preorder \n3. Postorder \n4. Exit\n");
        printf("Enter your choice : ");
        scanf("%d", &ch);
        switch (ch)
        {
            case 1:
                Inorder(Tree);
                printf("\n");
                break;
```

```

case 2:
Preorder(Tree);
printf("\n");
break;
case 3:
Postorder(Tree);
printf("\n");
break;
}
} while (ch <= 3);
return 0;
}
Node *Insert(Node *Tree, int e)
{
Node *NewNode = malloc(sizeof(Node));
if (Tree == NULL)
{
NewNode->element = e;
NewNode->left = NULL;
NewNode->right = NULL;
Tree = NewNode;
}
else if (e < Tree->element)
{
Tree->left = Insert(Tree->left, e);
}
else if (e > Tree->element)
{
Tree->right = Insert(Tree->right, e);
}
return Tree;
}
void Inorder(Node *Tree)
{
if (Tree != NULL)
{
Inorder(Tree->left);
printf("%d\t", Tree->element);
Inorder(Tree->right);
}
}
void Preorder(Node *Tree)
{
if (Tree != NULL)

```

```
{  
    printf("%d\t", Tree->element);  
    Preorder(Tree->left);  
    Preorder(Tree->right);  
}  
}  
void Postorder(Node *Tree)  
{  
    if (Tree != NULL)  
    {  
        Postorder(Tree->left);  
        Postorder(Tree->right);  
        printf("%d\t", Tree->element);  
    }  
}
```