Ex 8: Tree Traversal

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PROGRAM :

```c
#include <stdio.h>

#include <stdlib.h>


struct node {

   int element;

   struct node* left;

   struct node* right;

};

struct node* createNode(int val)

{

   struct node* Node = (struct node*)malloc(sizeof(struct node));

   Node->element = val;

   Node->left = NULL;

   Node->right = NULL;


   return (Node);

}

void traversePreorder(struct node* root)

{

   if (root == NULL)

      return;

   printf(" %d ", root->element);

   traversePreorder(root->left);

   traversePreorder(root->right);
```

```c
}

void traverseInorder(struct node* root)
{
    if (root == NULL)
        return;
    traverseInorder(root->left);
    printf(" %d ", root->element);
    traverseInorder(root->right);
}

void traversePostorder(struct node* root)
{
    if (root == NULL)
        return;
    traversePostorder(root->left);
    traversePostorder(root->right);
    printf(" %d ", root->element);
}

int main()
{
    struct node* root = createNode(36);
    root->left = createNode(26);
    root->right = createNode(46);
    root->left->left = createNode(21);
```

```c
    root->left->right = createNode(31);

    root->left->left->left = createNode(11);

    root->left->left->right = createNode(24);

    root->right->left = createNode(41);

    root->right->right = createNode(56);

    root->right->right->left = createNode(51);

    root->right->right->right = createNode(66);


    printf("\n The Preorder traversal of given binary tree is -\n");

    traversePreorder(root);


    printf("\n The Inorder traversal of given binary tree is -\n");

    traverseInorder(root);


    printf("\n The Postorder traversal of given binary tree is -\n");

    traversePostorder(root);


    return 0;
}
```

OUTPUT:


```
aiml231501129@cselab:~$ gcc ex8.c
aiml231501129@cselab:~$ ./a.out

 The Preorder traversal of given binary tree is -
 36  26  21  11  24  31  46  41  56  51  66
 The Inorder traversal of given binary tree is -
 11  21  24  26  31  36  41  46  51  56  66
 The Postorder traversal of given binary tree is -
 11  24  21  31  26  41  51  66  56  46  36 aiml231501129@cselab:~$
aiml231501129@cselab:~$
```