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COURSE NAME: DATA STRUCTURES FOR MODERN COMPUTING SYSTEMS

COURSE CODE: CSA0302

Experiment 19: Binary Tree Traversing

Code:

```
#include <stdio.h>

#include <stdlib.h>

struct node {
    int data;
    struct node *left, *right;
};

struct node* createNode(int value) {
    struct node* newNode = (struct node*)malloc(sizeof(struct node));
    newNode->data = value;
    newNode->left = newNode->right = NULL;
    return newNode;
}

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

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

void postorder(struct node* root) {
```

```

    if (root == NULL) return;
    postorder(root->left);
    postorder(root->right);
    printf("%d ", root->data);
}

int main() {
    struct node* root = createNode(1);
    root->left = createNode(2);
    root->right = createNode(3);
    root->left->left = createNode(4);
    root->left->right = createNode(5);
    printf("Inorder Traversal: ");
    inorder(root);
    printf("\n");
    printf("Preorder Traversal: ");
    preorder(root);
    printf("\n");
    printf("Postorder Traversal: ");
    postorder(root);
    printf("\n");
    return 0;
}

```

Output:

```

Inorder Traversal: 4 2 5 1 3
Preorder Traversal: 1 2 4 5 3
Postorder Traversal: 4 5 2 3 1

```

=== Code Execution Successful ===