15/2/24

• WEEK-8

+ Tree

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

struct Node {
    int Key;
    struct Node *left;
    struct Node *right;
};

struct Node * createNode(int key) {
    struct Node* newNode = (struct Node*) malloc(
    sizeof(struct Node));
    newNode->Key = Key;
    newNode->left = newNode->right = NULL;
    return newNode;
}
struct Node* insert(struct Node* root, int Key)
{
    if (root == NULL)
        return createNode(Key);
```

```
if (Key < root -> Key)
    root -> left = insert (root -> left, Key);
else if (key > root -> key)
    root -> left = insert (root -> left, key);

return root;
}

void inorderTraversal (struct Node* root) {
    if (root != NULL) {
        postorderTraversal (root -> left);
        postorderTraversal (root -> right);
    }
}
void postorderTraversal (struct Node* root) {
    if (root != NULL)
        postorderTraversal (root -> left);
        postorderTraversal (root -> right);
        printf ("%d", root -> key);
    }
}
```

15/2/24.

```
int main() {
    struct Node * root = NULL;
    int choice, element;

    do {
        printf("choose operation :\n");
        printf(":1. Insert Element \n");
        printf("2. Inorder Traversal \n");
        printf("3. Preorder Traversal \n");
        printf("4. Postorder Traversal \n");
        printf("5. Exit \n");

        printf("Enter your choice");
        scanf("%d", &choice);

        switch (choice) {
            case 1:
                printf("Enter the elemnt to insert");
                scanf("%d", &choice")
                root = insert(root, element);
                break;

            case 2:
                printf("Inorder traversal");
                inorder(root);
                printf("\n");
```

```
        break;
        printf("Preorder traversal");
        preorder(root);
        break;

    case 3:
        printf("Preorder traversal");
        preorder(root);
        break;

    case 4:
        printf("Postorder traversal");
        postorder Traversal(root);
        break;
    case 5;
        printf("Exit program.\n");
        break;
    default:
        printf("Invalid choice\n");
}
}while(choice != 5);
return 0
}
```

WEEK-8

Output: Menuce

1) Insert an element into tree.
2) to print the tree elements in inorder traversal
3) to print the tree elements in preorder traversal
4) to print the tree elements in postorder traversal
5) to exit.

I Enter your choice:
1
Enter data input: 100
20
10
30
200
1500
300
2 Enter your choice: 2
inorder traversal
10 → 20 → 30 → 100 → 150 → 200 → 300
Preorder traversal
100 → 20 → 10 → 30 → 200 → 150 → 300
postorder traversal
10 → 30 → 20 → 150 → 300 → 200 → 100