Practical no:- 05[B]

STACK IMPLEMENTATION

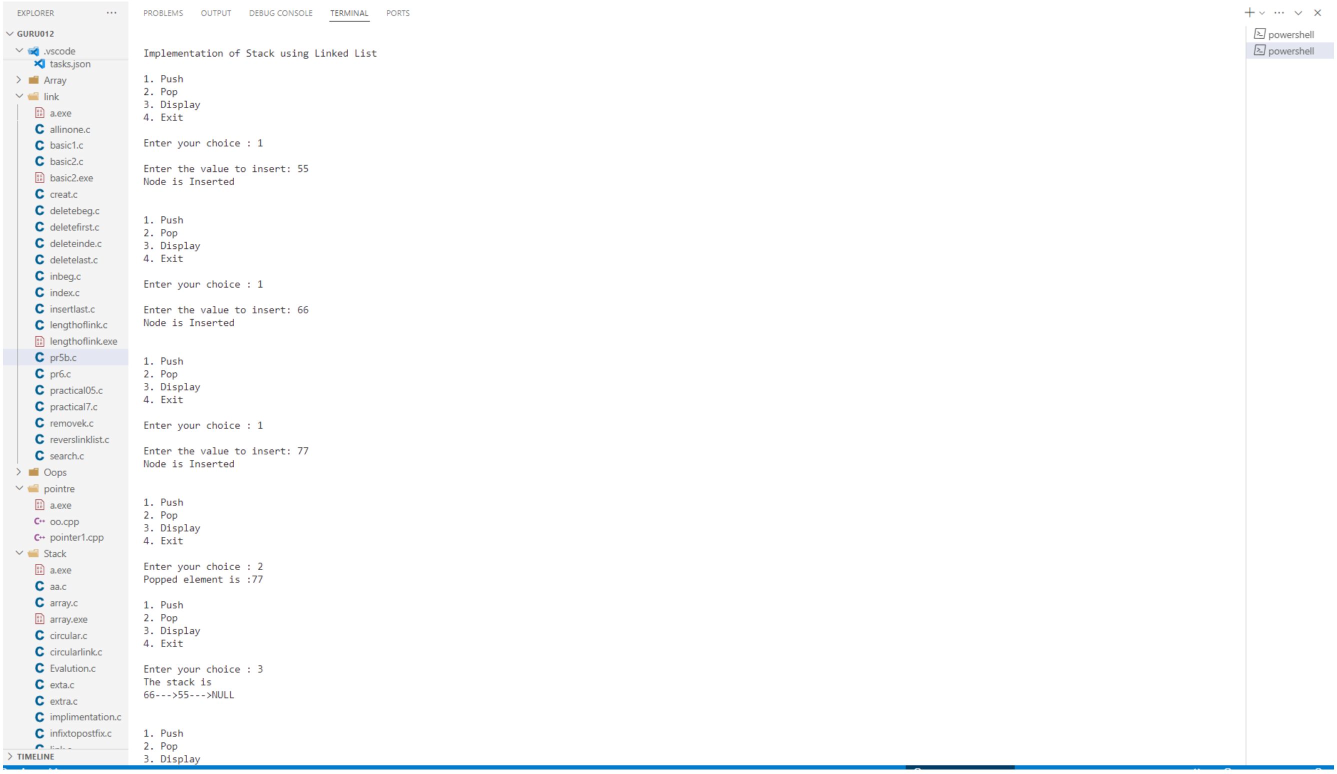
AIM :- Implement a Stack using linked list and performs the stack operations: Push,Pop and Print using the Driver Program such as 1.Push, 2.Pop, and Print And 4.Exit

PROGRAM :-

```
#include <stdio.h>

#include <stdlib.h>


// Structure to create a node with data and the next pointer

struct node {

   int info;

   struct node *ptr;

}*top,*top1,*temp;


int count = 0;

// Push() operation on a  stack

void push(int data) {

    if (top == NULL)

   {

      top =(struct node *)malloc(1*sizeof(struct node));

      top->ptr = NULL;

      top->info = data;

   }

   else

   {

      temp =(struct node *)malloc(1*sizeof(struct node));

      temp->ptr = top;

      temp->info = data;

      top = temp;

   }

   count++;
```

```
    printf("Node is Inserted\n\n");
}

int pop() {
     top1 = top;

    if (top1 == NULL)
    {
        printf("\nStack Underflow\n");
        return -1;
    }
    else
        top1 = top1->ptr;
    int popped = top->info;
    free(top);
    top = top1;
    count--;
    return popped;
}

void display() {
    // Display the elements of the stack
    top1 = top;

    if (top1 == NULL)
    {
        printf("\nStack Underflow\n");
        return;
    }

    printf("The stack is \n");
    while (top1 != NULL)
    {
        printf("%d--->", top1->info);
        top1 = top1->ptr;
    }
    printf("NULL\n\n");

}

int main() {
    int choice, value;
    printf("\nImplementation of Stack using Linked List\n");
    while (1) {
        printf("\n1. Push\n2. Pop\n3. Display\n4. Exit\n");
        printf("\nEnter your choice : ");
        scanf("%d", &choice);
        switch (choice) {
        case 1:
            printf("\nEnter the value to insert: ");
            scanf("%d", &value);
            push(value);
            break;
        case 2:
            printf("Popped element is :%d\n", pop());
            break;
        case 3:
            display();
            break;
        case 4:
            exit(0);
            break;
        default:

            printf("\nWrong Choice\n");

        }

    }

}
```

[OUTPUT]



```
Implementation of Stack using Linked List

1. Push
2. Pop
3. Display
4. Exit

Enter your choice : 1

Enter the value to insert: 55
Node is Inserted


1. Push
2. Pop
3. Display
4. Exit

Enter your choice : 1

Enter the value to insert: 66
Node is Inserted


1. Push
2. Pop
3. Display
4. Exit

Enter your choice : 1

Enter the value to insert: 77
Node is Inserted


1. Push
2. Pop
3. Display
4. Exit

Enter your choice : 2
Popped element is :77

1. Push
2. Pop
3. Display
4. Exit

Enter your choice : 3
The stack is
66--->55--->NULL


1. Push
2. Pop
3. Display
```

GitHUB Link:- https://github.com/guru24961/Data-Stracture-practical.git