DS PRACTICAL 05 (B)

AIM :- Implement a stack using linked list and perform the stack operations like : Push, Pop , Print using Menu Driver Program such as 1.Push, 2.Pop, 3.Print and 4.Exit.

PROGRAM :-

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

struct node {
   int data;
   struct node *next;
};
struct node *Top = NULL;

void push(int num) {
   struct node *p;
   p=(struct node *)malloc(sizeof(struct node));

   if (p== NULL) {
      printf("Stack Overflow\n");
      return;
   }
   p->data = num;
   p->next = Top;
   Top =p;
}

void pop() {
   struct node *t;
   if (Top == NULL) {
      printf("Stack Underflow\n");
   } else {
      t = Top;
```

```
        Top = Top->next;
        free(t);
        t = NULL;
    }
}

void print() {
    struct node *temp = Top;
    if (Top == NULL) {
        printf("Stack is empty\n");
        return;
    }
    printf("Elements of stacks are:\n");
    while (temp != NULL) {
        printf("%d\n", temp->data);
        temp = temp->next;
    }
}

int main() {
    int choice;
    int value;

    do {
        printf("Select the the operation:  1) Push 2) Pop 3) print 4) Exit \n");
        scanf("%d", &choice);
        switch (choice) {
        case 1:
            printf("Enter the value: ");
            scanf("%d", &value);
            push(value);
```

```
            break;
        case 2:
            pop();
            break;
        case 3:
            print();
            break;
        case 4:
            printf("Exit successfully\n");
            break;
        default:
            printf("Invalid choice\n");
        }
    } while (choice != 4);

    return 0;
}
```

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OUTPUT

```
PS C:\Users\chuna> g++ stack2.c
PS C:\Users\chuna> ./a.exe
Select the the operation:  1) Push 2) Pop 3) print 4) Exit
1
Enter the value: 12
Select the the operation:  1) Push 2) Pop 3) print 4) Exit
1
Enter the value: 23
Select the the operation:  1) Push 2) Pop 3) print 4) Exit
1
Enter the value: 54
Select the the operation:  1) Push 2) Pop 3) print 4) Exit
1
Enter the value: 65
Select the the operation:  1) Push 2) Pop 3) print 4) Exit
1
Enter the value: 23
Select the the operation:  1) Push 2) Pop 3) print 4) Exit
2
Select the the operation:  1) Push 2) Pop 3) print 4) Exit
3
Elements of stacks are:
65
54
23
12
Select the the operation:  1) Push 2) Pop 3) print 4) Exit
4
Exit successfully
PS C:\Users\chuna>
```

GITHUB LINK GOR PRACTICAL:

https://github.com/Nishikant-Chunarkar/DATA_STRUCTURE_PRACTICAL