**CollegeWork\DataStructure\stack-using-linkedlist.c**

```c
//wirite a program to implement stack using linked list.

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

struct node {
    int data;
    struct node *next;
};

void push(struct node **head, int new_data) {
    struct node *new_node = (struct node *)malloc(sizeof(struct node));
    new_node->data = new_data;
    new_node->next = *head;
    *head = new_node;
}

int pop(struct node **head) {
    struct node *temp = *head;
    int data = (*head)->data;
    *head = temp->next;
    free(temp);
    return data;
}


void display(struct node *head) {
    struct node *temp = head;

    while (temp != NULL) {
        printf("%d ", temp->data);
        temp = temp->next;
    }
    printf("\n");
}

void end(struct node *head){
    free(head);
    exit(0);
}

int main(){
    int op, data;
    struct node* head = NULL;
    while(1){
        printf("1.Push, 2.Pop, 3.Display, 4.Exit.\nEnter Your choice: ");
        scanf("%d",&op);
        switch(op){
            case 1:
                printf("Enter data of node: ");
                scanf("%d",&data);
                push(&head, data);
                break;
            case 2:
                if(head == NULL){
                    printf("Underflow.\n");
                }else{
```

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                    printf("Removed element is %d\n",pop(&head));
                }
                break;
            case 3:
                if(head == NULL){
                    printf("Stack is Empty.\n");
                }else{
                    printf("The elements of stack are: ");
                    display(head);
                }
                break;
            case 4:
                end(head);
            default:
                printf("Invalid Input.\n");
        }
    }
    return 0;
}

OUTPUT

PS S:\WorkSpace\CollegeWork\DataStructure> gcc .\stack-using-linkedlist.c
PS S:\WorkSpace\CollegeWork\DataStructure> ./a
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 1
Enter data of node: 12
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 1
Enter data of node: 13
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 1
Enter data of node: 14
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 3
The elements of stack are: 14 13 12
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 2
Removed element is 14
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 2
Removed element is 13
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 3
The elements of stack are: 12
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 2
Removed element is 12
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 2
Underflow.
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 3
Stack is Empty.
1.Push, 2.Pop, 3.Display, 4.Exit.
Enter Your choice: 4
PS S:\WorkSpace\CollegeWork\DataStructure>
```