بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

Using arrays

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

#define SIZE 100
int stack[SIZE];
int top = -1;

void push(int value)
{
    if (top == SIZE - 1)
        printf("Overflow, Stack is full.\n");
    else
    {
        top++;
        stack[top] = value;
        printf("Insertion completed.\n");
    }
}

void pop()
{
    if (top == -1)
        printf("Underflow, Stack is empty§\n");
    else
    {
        printf("%d deleted, ", stack[top]);
        top--;
    }
}

void display()
{
    if (top == -1)
        printf("Underflow, Stack is already empty.\n");
    else
    {
        printf("Stack's elements are:\n");
        for (int i = top; i >= 0; i--)
            printf("\n\t|\t%d\t|\n\t----------------", stack[i]);
    }
}
```

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```c
void display2()
{
    if (top == -1)
        printf("Underflow, Stack is already empty.\n");
    else
    {
        printf("Stack's elements are:\n");
        for (int i = top; i >= 0; i--)
            printf("%d->", stack[i]);
    }
}

int main()
{
    int value, choice;
    do
    {
        printf("1- push\n");
        printf("2- pop\n");
        printf("Choice = ");
        scanf("%d", &choice);
        switch (choice)
        {
        case 1:
            printf("Enter value = ");
            scanf("%d", &value);
            push(value);
            break;
        case 2:
            pop();
            break;
        default:
            printf("Invalid chocie. Try again.\n");
            break;
        }
        printf("\n-----------------------------\n");
        display();
        printf("\n-----------------------------\n");
    } while (1);

    return 0;
}
```

Using linked list

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

typedef struct Node
{
    int data;
    struct Node *next;
} stack;
stack *head = NULL;

stack *createNode(stack *newElement, int value)
{
    newElement = (stack *)malloc(sizeof(stack));
    newElement->next = NULL;
    newElement->data = value;
    return newElement;
}

void push(int value)
{
    stack *newElement;
    newElement = createNode(newElement, value);
    if (head == NULL)
        head = newElement;
    else
    {
        newElement->next = head;
        head = newElement;
    }
}
void pop()
{
    if (head == NULL)
        printf("Stack is empty!\n");
    else
    {
        stack *temp = head;
        head = temp->next;
        free(temp);
    }
}

void display()
{
    if (head == NULL)
        printf("List is empty!\n");
    else
    {
        stack *temp = head;
        while (temp->next != NULL)
        {
            printf("\n\t|\t%d\t|\n\t----------------", temp->data);
            temp = temp->next;
        }
        printf("\n\t|\t%d\t|\n\t----------------", temp->data);
    }
}
```

```c
int main()
{
    int value, choice;
    do
    {
        printf("1- push\n");
        printf("2- pop\n");
        printf("Choice = ");
        scanf("%d", &choice);
        switch (choice)
        {
        case 1:
            printf("Enter value = ");
            scanf("%d", &value);
            push(value);
            break;
        case 2:
            pop();
            break;
        default:
            printf("Invalid chocie. Try again.\n");
            break;
        }
        printf("\n-----------------------------\n");
        display();
        printf("\n-----------------------------\n");
    } while (1);

    return 0;
}
```

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