Lab2- Stack Implementation

Write a program to simulate the working of stack using an array with the following :

a) Push

b) Pop

c) Display The program should print appropriate messages for stack overflow, stack underflow

1. Upload the write up of the pseudo code/algorithm in github and share the github link in google classroom

2. upload the implementation (C code) in the github and share the link here.

3. Demonstrate the working of the code.


```c
#include<stdio.h>
#define SIZE 3

void push(int);
void pop();
void display();

int stack[SIZE],top=-1;

int main()
{
    int n,choice;
    while(1)
    {
```

```c
printf("\nMENU\n\n");
printf("(1)Push\n");
printf("(2)Pop\n");
printf("(3)Display\n");
printf("(4)Exit\n");
printf("Enter your choice: \n\n");
scanf("%d",&choice);

switch(choice)
{
        case 1:
                printf("Enter the value to be inserted:");
                scanf("%d",&n);
                push(n);
                break;

        case 2:
                pop();
                break;

        case 3:
                display();
                break;

        case 4:
                exit(0);
```

```c
                    default: printf("Incorrect Selection.Select Again!\n\n");
            }
      }
      return 0;
}


void push(int n)
{
      if(top==SIZE-1)
      {
            printf("Stack overflow\n\n");
      }
      else
      {
            top++;
            stack[top]=n;
            printf("Insertion Successful\n\n");
      }
}

void pop()
{
      if(top==-1)
      {
            printf("Stack underflow\n\n");
```

```c
        }
        else
        {
                printf("Deleted: %d\n\n",stack[top]);
                top--;
        }
}


void display()
{
        if(top==-1)
        {
                printf("Stack underflow\n\n");
        }
        else
        {
                int i;
                printf("Stack elemrnts are: \n\n");
                for(i=top;i>=0;i--)
                        printf("%d\n",stack[i]);
        }
}
```

```
(1)Push
(2)Pop
(3)Display
(4)Exit
Enter your choice:

1
Enter the value to be inserted:5
Insertion Successful


MENU

(1)Push
(2)Pop
(3)Display
(4)Exit
Enter your choice:

3
Stack elemrnts are:

5

MENU

(1)Push
(2)Pop
(3)Display
(4)Exit
Enter your choice:

2
Deleted: 5
```