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.

Code: -

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

#define SIZE 10
int stack[SIZE];
int top=-1;

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

int main()
{
    int choice, value;
    while(1) {
        printf("\n\n*****STACK MENU*****\n");
        printf("1. Push\n");
        printf("2. Pop\n");
        printf("3. Display\n");
        printf("4. Exit\n");
        printf("Enter your choice: ");
        scanf("%d",&choice);
        switch(choice) {
            case 1:
            printf("Enter the value to be inserted: ");
            scanf("%d",&value);
```

```
            scanf("%d",&value);
            push(value);
            break;
            case 2:
            pop();
            break;
            case 3:
            display();
            break;
            case 4:
            printf("Exiting the program\n");
            exit(0);
            default:
            printf("Wrong selection!!! Please try again!\n");
        }
    }
    return 0;
}
```

```
void push(int value)
{
    if(top==SIZE-1){
        printf("\n Stack is full!! Insertion is not possible!!"); }
    else {
        top++;
    stack[top]=value;
    printf("\nInsertion success!!!");
    }
}
void pop() {
    if(top==-1) {
        printf("\n Stack is Empty!! Deletion is not possible!"); }
        else {
            printf("\n Deleted: %d",stack[top]);
            top--;
        }
    }
```

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

OUTPUT: -

```
*****STACK MENU*****
1. Push
2. Pop
3. Display
4. Exit
Enter your choice: 1
Enter the value to be inserted: 26

Insertion success!!!

*****STACK MENU*****
1. Push
2. Pop
3. Display
4. Exit
Enter your choice: 3

 Stack elements are:
26


*****STACK MENU*****
1. Push
2. Pop
3. Display
4. Exit
Enter your choice:
```