LAB programme : 1 :

write a program to simulate the working of stack using an array using push, pop, and display.
the program should print message for stack overflow and stack underflow.

```
#include <stdio.h>
#include <stdlib.h>
#define stack_size 5

int top=-1;
int s[10];
int item;

void push(){
    if(top== stack_size-1){

        printf("stack overflow\n");
        return;
    }
    else{
        printf("Enter the item to be inserted\n");
        scanf("%d",&item);

    top=top+1;
    s[top] = item;

}
```

```
int pop(){
        if(top==-1){
            printf("Stack Empty");
            return 0;
        }
    else{
        printf("Element removed is : %d \n",
                                    s[top--]);
        return -1;
    }
}

void display(){
    int i;
    if(top==-1){
        printf("Stack is Empty");
        return;
    }
    printf("The Stack items are: \n");
    for(i=top; i>=0; i--){
        printf("%d \n", s[i]);
    }
}
```

```
void main ()}

    int item_deleted;
    int choice;

    for (;;){

printf (" Enter\n1. PUSH\n2. POP\n3. DISPLAY\n
                    4. EXIT\n");

scanf ("%d", &choice);

switch (choice){
    case 1 : push ();
             break;
    case 2 : pop ();
             break;
    case 3 : display ();
             break;
    default ; exit (0);

  }

}

}
```

* Output:

→ Enter
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice
1
Enter Element to be inserted
25

→ Enter
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice
1
Enter element to be inserted
50

→ Enter
1. PUSH
2. POP
3. DISPLAY
4. EXIT
Enter your choice
3
The components of stack are: 7
25
50