Lab Program-1 [Lab-02]

① 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

```
#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;
 }
 top = top+1;
 s[top] = item;
}
```

```
int pop()
{
 if (top == -1)
 return -1;
 return s[top--];
}
void display()
{
 int i;
 if (top == -1)
 {
 printf ("stack is empty \n");
 return;
 }
 printf (" Contents of the stack : \n");
 for (i=0; i<=top; i++)
 {
 printf ("%d\n", s[i]);
 }
}
void main()
{
 int item_deleted;
 int choice;
 for (;;)
{
 printf ("\n1. Push \n2. Pop \n3. Display \n4. Exit \n");
```

```
printf("Enter the choice\n");
scanf("%d",&choice);
switch(choice)
 {
 case 1: printf("Enter the item to be inserted\n");
        scanf("%d",&item);
        push();
        break;
 case 2: item_deleted = pop();
        if(item_deleted == -1)
        printf("Stack is empty\n");
        else
        printf("Item deleted is %d\n",item_deleted
                                        );
        break;
 case 3: display(); break;
    default : exit(0);
  }
 }
}
```