# Lab program - 1

1) Write a program to stimulate 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 <conio.h>
#define MAX 5

int top = -1, stack [MAX]
void push ();
void pop ();
void display ();
void main ()
{
    int ch;
    while (1)
    {
        printf ("\n*** Stack Menu ***");
        printf ("\n\n1. Push \n2. Pop \n3. Display
                \n4. Exit");
        printf ("\n\n Enter any number between
                1 to 4 :");
        scanf ("%d" &ch);
```

```
switch (ch)
 {
   case 1 : push ();
            break;
   Case 2 : pop ();
            break;
   case 3 : display ();
            break;
   case 4 : Exit (0);
   default : printf ("\n Invalid input
 }
}

id push ()
  int value;

if (top == MAX-1)
{
   printf ("\n The stack is full ");
}
 else
 {
   printf ("\n Enter an element to push:
   Scanf ("%d", & value);
   top = top+1;
   Stack [top] = val;
 }
}

void pop ()
{
   if (top == -1)
```

```
{
  printf("\n The stack is empty !!!");
}
else
{
  printf("\n Deleted element is %d",
          stack[top]);
  top = top - 1
}
}
void display()
{
  int i;
  if (top == -1)
  {
  printf("\n stack is empty");
  }
  else
  {
    printf("\n stack is ....\n");
    for (i = top; i >= 0; --i)
    printf("%d\n", stack[i]);
}
}
```