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LAB-1 PROGRAM

(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>
#include <conio.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= top ; i>=0; i--)
   {
     printf ("%d\n", s[i]);
   }
}
 void main()
{
  int item_deleted;
  int choice;
  clrscr();
  for(;;)
{
  printf ("\n 1: push\n 2: pop\n 3: 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;
  default : exit(0);
}
}
  getch();
}
```