1st Lab program

Write a program to simulate the working of stack using an array with

a) Push()
b) Pop()
c) display()

The program shd print appropriate message for stack overflow and underflow.

Sol:

```
#include <stdio.h>
#include <stdlib.h>
#define stacksize 3
int top = -1;
int s[10];
int item;
void push()
{
  if (top == stacksize -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_delete;
  int choice;
  while(1)
  {
  printf("\n 1. push \n 2. pop \n 3. display \n
                4. exit \n");
  printf("enter the choice\n");
  scanf("%d", &choice);
  switch(choice)
  {
    case 1: printf("enter item to be inserted\n");
            scanf("%d", &item);
            push(item);
             break;
    case 2: item_delete = pop();
            if (item_delete == -1)
            printf("stack is empty\n");
            else
            printf("item deleted is %d\n", item_
                                          deleted);
            break;
```

```
case 3: display();
        break;
case 4: exit(0);
default: printf("invalid \n");
         break;
    }
  }
}
```