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.

Program:

#include<stdio.h> #include<conio.h> #define SIZE 5 void push(int); void pop();

void display();

int stack[SIZE],top=-1; void main()

{

int choice,value; int clrscr(); while(1)

{

printf("\nMENU\n");

printf("1.push\n 2.pop\n 3.display\n 4.exit\n"); printf("Enter your choice:"); scanf("%d",&choice);

switch(choice)

{

case 1: printf("Enter the value to be inserted: "); scanf("%d",&value);

push(value); break;

case 2:pop(); break;

case 3:display(); break;

case 4: exit(0);

default:printf("WRONG SELECTION");

}

}

}

void push(int value)

{

if(top==SIZE-1)

{

printf("Stack is full");

}

else

{

top++; stack[top]=value;

printf("Insertion successful");

}

}

void pop()

{

if(top==-1)

{

printf("Stack is empty");

}

else

{

printf("deleted=%d",stack[top]); top--;

}

}

void display()

{

if(top==-1)

{

printf("stack is empty,underflow");

}

else

{

int i;

printf("stack elements are:"); for(i=top;i>=0;i--)

{

printf("%d",stack[i]);

}

}

}

