AIM: Implement Stack ADT using array.

CODE:

#include<stdio.h>

#include<conio.h>

#define SIZE 10

int top=-1;

int stack[SIZE];

int i;

void push();

void pop();

void peek();

void display();

void main()

{

int choice;

clrscr();

printf("---Stack Implementation---\n\n");

while(1)

{

printf("\nOperations performed by Stack");

printf("\n1.Push\n2.Pop\n3.Peek\n4.Display\n5.End");

printf("\n\nEnter the choice: ");

scanf("%d",&choice);

switch(choice)

{

case 1:

push();

break;

case 2:

pop();

break;

case 3:

peek();

break;

case 4:

display();

break;

case 5:

exit(0);

break;

default:

printf("\nInvalid choice\n");

}

}

}

void push()

{

int x;

if(top==SIZE-1)

{

printf("\nOverflow\n");

}

else

{

printf("\nEnter element to be inserted to the stack: ");

scanf("%d",&x);

top++;

stack[top]=x;

}

}

void pop()

{

if(top==-1)

{

printf("\nUnderflow\n");

}

else

{

printf("\nPopped element: %d\n", stack[top]);

top--;

}

}

void peek()

{

if(top==-1)

{

printf("\nUnderflow\n");

}

else

{

printf("\nThe topmost element: %d\n",stack[top]);

}

}

void display()

{

if(top==-1)

{

printf("\nUnderflow\n");

}

else

{

printf("\nElements present in the stack: \n");

for(i=top;i>=0;--i)

{

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

}

}

}

OUTPUT: