#include <stdio.h>

int STK[100], TOP = -1, i, n, x, choice;

void Push();

void Pop();

void Peep();

void Display();

void main()

{

printf("\t Welcome to Implementation of stack by using array \n");

printf("Enter the size of Stack (max size=100): ");

scanf("%d",&n);

do

{

printf("\n Stack Operation available: \n");

printf("\t1.Push\t 2.Pop\t 3.Peep\t 4.Display\t 5.Exit \n");

printf("\n Enter your choice: ");

scanf("%d", &choice);

switch (choice)

{

case 1:

Push();

break;

case 2:

Pop();

break;

case 3:

Peep();

break;

case 4:

Display();

break;

case 5:

printf("Exit: Program Finished");

break;

default:

printf("Please enter a valid choice: 1, 2, 3, 4, 5 \n");

}

} while (choice != 5);

}

void Push()

{

if (TOP >= n - 1)

{

printf(" Stack Overflow \n");

}

else

{

printf(" Enter the element to be pushed: ");

scanf("%d", &x);

TOP++;

STK[TOP] = x;

}

}

void Pop()

{

if (TOP < 0)

{

printf(" Stack Underflow \n");

}

else

{

printf(" The popped element is: %d \n", STK[TOP]);

TOP--;

}

}

void Peep()

{

printf(" Enter the position of the element from the top which you want to peep: ");

scanf("%d", &i);

if (TOP - i + 1 < 0)

{

printf(" Stack Underflow on Peep \n");

}

else

{

printf(" The %d element from the top is: %d \n", i, STK[TOP - i + 1]);

}

}

void Display()

{

if (TOP < 0)

{

printf(" Stack is empty \n");

}

else

{

printf(" The element in the stack are:");

for (i = TOP; i > -1; i--)

{

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

}

}

}

