/\*ARRAY IMPLEMENTATION OF STACK\*/

import java.util.\*;

public class Stack1 {

int stack[];

int n = 100;

int top = -1;

public Stack1() {

stack = new int[n];

}

public void pop() {

if (top <= -1) {

System.out.println("Stack underflow");

} else {

System.out.println("\nTop value removed from stack: " + stack[top]);

top--;

}

}

public void push(int value) {

if (top >= n - 1) {

System.out.println("Stack Overflow");

} else {

top++;

stack[top] = value;

}

}

public void display() {

if (top >= 0) {

System.out.println("The elements of the stack are:");

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

System.out.println(stack[i]);

}

} else {

System.out.println("Stack is empty.");

}

}

public static void main(String args[]) {

Stack1 stack = new Stack1();

while (true) {

System.out.println("IMPLEMENTATION OF STACK ADT USING ARRAYS");

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("1....Push\n2....Pop\n3....Display stack\n4....Exit");

Scanner myobj = new Scanner(System.in);

System.out.println("\nEnter your choice:");

int choice = Integer.parseInt(myobj.nextLine());

switch (choice) {

case 1:

System.out.println("\nEnter the value to push:");

int value = Integer.parseInt(myobj.nextLine());

stack.push(value);

break;

case 2:

stack.pop();

break;

case 3:

stack.display();

break;

case 4:

System.exit(0);

break;

default:

System.out.println("\nInvalid Choice. Please try again.");

}

}

}

}

OUTPUT :

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

1

Enter the value to push:

45

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

1

Enter the value to push:

66

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

1

Enter the value to push:

78

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

1

Enter the value to push:

99

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

1

Enter the value to push:

43

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

3

The elements of the stack are:

43

99

78

66

45

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

2

Top value removed from stack: 43

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

2

Top value removed from stack: 99

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

3

The elements of the stack are:

78

66

45

IMPLEMENTATION OF STACK ADT USING ARRAYS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1....Push

2....Pop

3....Display stack

4....Exit

Enter your choice:

4