OBJECT ORIENTED PROGRAMMING LAB

Experiment No.: 21

Name: vismaya mohan

Roll No:54

Batch: B

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Aim

1. Program to create a generic stack and do the Push and Pop operations.

Procedure

```
import java.util.*;
public class Stack
{
public static void main(String args[])
{
int n,ch;
StackOp st=new StackOp();
Scanner sc=new Scanner(System.in);
System.out.println("\n Enter the size of the stack\n");
n=sc.nextInt();
st.stack=new int[n];
do
{
System.out.println("\nPlease select a option");
System.out.println("1.PUSH");
System.out.println("2.POP");
System.out.println("3.DISPLAY");
System.out.println("4.EXIT");
ch=sc.nextInt();
switch(ch)
```

```
{
case 1: st.push(n);
break;
case 2: st.pop();
break;
case 3: st.display();
break;
case 4: System.exit(0);
}
}
while(ch!=4);
}
}
class StackOp
{
int item;
int top=-1;
int[] stack;
Scanner sc=new Scanner(System.in);
void push(int n)
{
if(top>=n-1)
System.out.println("\n Stack Overflow.");
else
{
System.out.println("\n Enter an item\n");
item=sc.nextInt();
top++;
stack[top]=item;
}
}
void pop()
{
if(top==-1)
System.out.println("\n Stack Underflow\n");
else
```

```
{
System.out.println("\n item "+stack[top]+" is poping out...\n");
top--;
}
}
void display()
{
int i=top;
if(top==-1)
System.out.println("\n Stack is empty\n");
else
{
System.out.println("\n The elements in the stack are:\n");
for(i=0;i<=top;i++)
System.out.print(stack[i]+ "\t");
}
}
}
```

Output Screenshot

```
C:\Users\Student\Documents>javac Stack.java

C:\Users\Student\Documents>java Stack

 Enter the size of the stack

4

Please select a option
1.PUSH
2.POP
3.DISPLAY
4.EXIT
1

 Enter an item

8

Please select a option
1.PUSH
2.POP
3.DISPLAY
4.EXIT
1

 Enter an item

7

Please select a option
1.PUSH
2.POP
3.DISPLAY
4.EXIT
1

 Enter an item

7
```

```
Please select a option
1.PUSH
2.POP
3.DISPLAY
4.EXIT
1

 Enter an item

9

Please select a option
1.PUSH
2.POP
3.DISPLAY
4.EXIT
3

 The elements in the stack are:

8       7       7       9
Please select a option
1.PUSH
2.POP
3.DISPLAY
4.EXIT
2

 item 9 is poping out...


Please select a option
1.PUSH
2.POP
3.DISPLAY
4.EXIT
```