PAGE :
DATE : / /

LAB-6

1) Write a java program with using generic show the class Stack for 5 integer & 5 double

```
import java.util.Scanner;

Class Stack<E>
{
    E stck[];
    int top;
Final int Size = 10;

    Stack()
    {
        stck[] = (E[]) new Object [Size];
        top = -1;
    }

Void push (E n.)
{
  if top == Size - 1)
  {
    System.out.println("overflow");
  }
  else
  {
    top++
    Stck[ta] = n;
  }
}
```

```
E pop()
{
    if (top <0)
    {
        System.out.println("Underflow");
        Return null;
    }
    else
    {
        top--;
        Return Stck[top];
    }
}
}

Class IntStack
{
  public static void main(String[]
                           Args)
  {
    Stack<Integer> mystack1 = new
        Stack<Integer>();
    Stack<double> mystack2 = new
        Stack<double>();
    Scanner s= new Scanner(System.in);
    System.out.println("Enter the elements
        into Stack");
```

```
for(int i=0; i<5; i++)
{
    int n = s.nextInt();
    mystack1.push(n);
}

System.out.println("Enter Elements
    into the Double Stack");

for(int i=0; i<5; i++)
{
    double m = s.nextDouble();
    mystack2 = push(m);
}

System.out.println("Elment of Stack1");

for(int i=0; i<5; i++)
{
  System.out.println(mystack1.pop());
}

System.out.println("Elment of Stack2")

for(int i=0; i<5; i++)
{
  System.out.println(mystack2.pop());
}
s.close();
}
```

Output:

Enter the Element into Stack
1
2
3
4
5
Enter the Element into double Stack
6
7
8
9
1

Elements of stack 1: 5
4
3
2
1

Element of Stack 2:
3.0
9.0
8.0
7.0
6.0

PAGE :
DATE : / /

1) Write a Java program to create an abstract class Shape with abstract methods calculateArea() & calculate perimeter(). Create Subclass with & triangle.

```
import java.util.*;

abstract class Shape
{
    double a;
    double b;
    double c;
    abstract void Area();
    abstract void perimeter();
}

Class triangle extends Shape
{
    triangle(double x, double y, double z)
    { a = x;
      b = y;
      c = z;
    }

  void calculate area()
  {
    double s = (a+b+c) / 2;
    System.out.println("Area" +
Math.Sqrt(S*(S-a)*(S-b*)*(S-c)));
}
```

```
Void calculate perimeter(){
System.out.println("perimeter
    (a+b+c);
}
class Circle calculate Shape{
    Circle(double r)
    {
        a=r;
    }

    Void calculate Area()
    {
        System.out.println("Area="
    + (Math.PI*a*a));
    }

    Void calculate Perimeter()
    {
        System.out.println("perimeter="
            (2*Math.PI*a));
    }
}

Class Shapium{

    public static void main(String[]
                                args)
    {
        Triangle t = new Triangle(2.0,
                        3.0, 5.0)
```

```
Circle C = new Circle(50);
t.calculateArea();
t.calculatePerimeter();
C.calculateArea();
C.calculatePerimeter();
}

}
```

OUTPUT:

Area = 4.15 78..
Perimeter = 110
Area = 78.539..
perimeter = 31.415...

String

Demonstrate String length, String literal, String concat

```
public class String1
{
    public static void main(String args[])
    {
        System.out.println("Demonstrating String length:");
        String a = "Hello";
        System.out.println(a.length());
        System.out.println("Str concat:");
        String age = "9";
        String msg = "He's " + age + " years old";
        System.out.println(msg);
        System.out.println("Demonstrate literal");
        System.out.println("abc".length());
    }
}
```

OUTPUT:

Demonstrating String length.

5

Str concat:

He is 9 years old
Demonstrate literals
3

Ask getChars() to extract Bmsce from "Welcome to Bmsce college"

```
Pubblic class String 2{

    Public Static Void main (String args[])
{
    String S: "Welcome to BMSCE College";
    int Start = 10;
    int end = 16;
    char buf[] : new char [end-Start];
    S. get chars (Start, end, buf, 0);
    System. out. println (buf);
}
}
```

Output

BMSCE

16/01/24

STRINGS

SHREE VARNA. H
1BM22CS263

(1) BMSCE
BMSCE

(2) 3
3
Roll no 100 is present

(3) Dimensions are 100.0 by 140.0 by 120.0
box b : Dimensions are 100.0 by
140.0 by 120

(4) bmsce

(5) 65
66
67
Welcome to bmsce college

(6) Bmsce equals Bmsce → true
Bmsce equals college → false
Bmsce equalsIgnoreCase BMSCE → true

(7) Substring is matched
S1 = "Bmsce college"
S2 = "Welcome to Bmsce college of Engineering"

(8) true
false

PAGE :
DATE : / /

(9) False
true

(10) Hello equals Hello → true
Hello == Hello → false

(11) The names in alphabetical order are
apple
bats
cat
lion
watch

(12) Sorted Numbers (Ascending order)
[1, 2, 3, 4, 5, 6, 7, 8]

(13) This was a list
Thwas was too

(14) hello world

(15) Commage

(16) Hello friends

(17) Student 1
name : prem
Reg no : 12345
Semester : 3
CGPA : 9.54

Student 2
name : Harish
Reg no : 154
Semester : 3
CGPA : 8.54

(18) charAt 3 is 'A'
reverse of SOS is SO.S

(19) Eagle is flying
Eagle makes a sound

Hawk is moving
Hawk is making a sound.

(20) Circle - Area : 88.53
perimeter : 61.42

Triangle_Area : 50
Perimeter - 12.0