1. Write a program in Java to create a triangle class and also create three objects of three different types of triangles using constructor.

class triangle

{

    int side1;

    int side2;

    int side3;

    triangle()

    {

        side1 = side2 = side3 = 0;

    }

    triangle(int a)

    {

        side1 = side2 = side3 = a;

    }

    triangle(int a, int b)

    {

        side1 = side2 = a;

        side3 = b;

    }

    triangle(int a, int b, int c)

    {

        side1 = a;

        side2 = b;

        side3 = c;

    }

    String checkTriangle(int a, int b, int c) {

        return (a == b && b == c)? "Equilateral" : (a == b || b == c || c == a)? "Isosceles" : "Scalene";

    }

    void output()

    {

        System.out.println(checkTriangle(side1, side2, side3));

    }

}

class testTriangle

{

    public static void main(String[] args)

    {

        triangle t1 = new triangle(Integer.parseInt(args[0]));

        triangle t2 = new triangle(Integer.parseInt(args[1]), Integer.parseInt(args[2]));

        triangle t3 = new triangle(Integer.parseInt(args[3]), Integer.parseInt(args[4]), Integer.parseInt(args[5]));

        t1.output();

        t2.output();

        t3.output();

    }

}

OUTPUT:

Microsoft Windows [Version 10.0.19045.3324]

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C:\Users\Anurag Singh>d:

D:\>cd desktop

D:\Desktop>cd java

D:\Desktop\Java>javac sixth.java

D:\Desktop\Java>java testTriangle 3 4 5 7 8 9

Equilateral

Isosceles

Scalene

1. Write a program in Java to copy the details of an object to another object during the instantiation of it.

class copyComplex

{

    int real;

    int imaginary;

    copyComplex()

    {

        real = imaginary = 0;

    }

    copyComplex(int r, int i)

    {

        real = r;

        imaginary = i;

    }

    copyComplex(copyComplex c)

    {

        real = c.real;

        imaginary = c.imaginary;

    }

    void output()

    {

        if(imaginary >= 0)

            System.out.println("The complex number is: " + real + " + " + imaginary + "i");

        else

            System.out.println("The complex number is: " + real + " - " + Math.abs(imaginary) + "i");

    }

}

class testCopy

{

    public static void main(String[] args)

    {

        copyComplex c1 = new copyComplex(Integer.parseInt(args[0]), Integer.parseInt(args[1]));

        copyComplex c2 = new copyComplex(c1);

        c1.output();

        c2.output();

    }

}

OUTPUT:

Microsoft Windows [Version 10.0.19045.3324]

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C:\Users\Anurag Singh>d:

D:\>cd desktop

D:\Desktop>cd java

D:\Desktop\Java>javac seventh.java

D:\Desktop\Java>java testCopy -7 -4

The complex number is: -7 - 4i

The complex number is: -7 - 4i

1. Write a program in Java to print the count of the number of objects created.

class TRIANGLE

{

    int side1;

    int side2;

    int side3;

    static int count;

    TRIANGLE()

    {

        side1 = side2 = side3 = 0;

        count++;

    }

    TRIANGLE(int a)

    {

        side1 = side2 = side3 = a;

        count++;

    }

    TRIANGLE(int a, int b)

    {

        side1 = side2 = a;

        side3 = b;

        count++;

    }

    TRIANGLE(int a, int b, int c)

    {

        side1 = a;

        side2 = b;

        side3 = c;

        count++;

    }

    String checkTRIANGLE(int a, int b, int c) {

        return (a == b && b == c)? "Equilateral" : (a == b || b == c || c == a)? "Isosceles" : "Scalene";

    }

    void output()

    {

        System.out.println(checkTRIANGLE(side1, side2, side3));

    }

}

class testTri

{

    public static void main(String[] args)

    {

        TRIANGLE t1 = new TRIANGLE(Integer.parseInt(args[0]));

        TRIANGLE t2 = new TRIANGLE(Integer.parseInt(args[1]), Integer.parseInt(args[2]));

        TRIANGLE t3 = new TRIANGLE(Integer.parseInt(args[3]), Integer.parseInt(args[4]), Integer.parseInt(args[5]));

        t1.output();

        t2.output();

        t3.output();

        System.out.println(TRIANGLE.count + " number of objects are created.");

    }

}

OUTPUT:

Microsoft Windows [Version 10.0.19045.3324]

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C:\Users\Anurag Singh>d:

D:\>cd desktop

D:\Desktop>cd java

D:\Desktop\Java>javac eight.java

D:\Desktop\Java>java testTri 1 4 7 8 8 8

Equilateral

Isosceles

Equilateral

3 number of objects are created.