1. Write a program in Java to create a class CONVERT in a package P1. The class consists of the method toBinary() that will convert a decimal number to its equivalent binary. Call the method toBinary() from package P2 to get the equivalent binary representation of the number 31.

**// Inside the folder named 'P1' and file named 'CONVERT.java'**

package *P*1;

public class CONVERT {

    public void toBinary(int num) {

        for(int i = 31; i >= 0; i--)

System.out.print((num >> i) & 1);

    }

}

**// Inside the folder named 'P2' and file named 'SHOW.java'**

package *P*2;

import P1.CONVERT;

public class SHOW {

    public static void main(String[] args) {

        CONVERT obj = new CONVERT();

        obj.toBinary(Integer.parseInt(args[0]));

    }

}

OUTPUT:

Microsoft Windows [Version 10.0.19045.3570]

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C:\Users\Anurag Singh>d:

D:\>cd desktop/java/college/DecimalToBinary

D:\Desktop\Java\College\DecimalToBinary>javac P1/CONVERT.java

D:\Desktop\Java\College\DecimalToBinary>javac P2/SHOW.java

D:\Desktop\Java\College\DecimalToBinary>java P2/SHOW 31

00000000000000000000000000011111

1. Write a program in Java to compute the following expression : y = (9 \* f + 3.14 \* c) / (c - f) where c and f are given by user. Handle the exception in such a way that the program will not be asorted for c == f.

class COMPUTE {

    public static void main(String[] args) {

        Double c = Double.parseDouble(args[0]);

        Double f = Double.parseDouble(args[1]);

        try {

            if(c \* 1.0 == f \* 1.0) {

                throw new ArithmeticException();

            }

            System.out.println(((9 \* f) + (3.14 \* c)) / (c - f));

        } catch(ArithmeticException e) {

            System.out.println("Arguments must be different.");

        }

    }

}

OUTPUT:

Microsoft Windows [Version 10.0.19045.3570]

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C:\Users\Anurag Singh>d:

D:\>cd desktop/java/college

D:\Desktop\Java\College>javac twentyThird.java

D:\Desktop\Java\College>java COMPUTE 5 5

Arguments must be different.

D:\Desktop\Java\College>java COMPUTE 100 50

15.28

1. Write a program in Java to initialize an array of size 10. Handle the exception when you print the element of the array from the index 5 to 12.

class outOfBounds {

    static int arr[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};

    public static void main(String[] args) {

        try {

            for(int i = 5; i <= 12; i++) {

                System.out.print(arr[i] + " ");

            }

        } catch(ArrayIndexOutOfBoundsException e) {

            System.out.println();

            System.out.println("Array Index Out Of Bounds");

        }

    }

}

OUTPUT:

Microsoft Windows [Version 10.0.19045.3570]

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C:\Users\Anurag Singh>d:

D:\>cd desktop/java/college

D:\Desktop\Java\College>javac twentyFourth.java

D:\Desktop\Java\College>java outOfBounds

6 7 8 9 10

Array Index Out Of Bounds