**Name-Eshant Das**

**Reg number - 12002058**

Q1. 1.Write a Java program to print the result of the following operations. Go to the editor

Test Data:

a. -5 + 8 \* 6

b. (55+9) % 9

c. 20 + -3\*5 / 8

d. 5 + 15 / 3 \* 2 - 8 % 3

Expected Output :

43

1

19

13

**Ans** import java.util.\*;

public class Assignment

{

    public static void main(String args[])

    {

        Scanner sc=new Scanner(System.in);

System.out.println(-5+8\*6);

System.out.println((55+9)%9);

System.out.println(20+(-3\*5/8));

System.out.println(5+15/3\*2-8%3);

  }

}

**Q2.** 2.Write a Java program that takes two numbers as input and display the product of two numbers.

**Ans**

import java.util.\*;

public class Assignment

{

    public static void main(String args[])

    {

        Scanner sc=new Scanner(System.in);

int a,b;

System.out.println("Enter the 2 numbers");

a=sc.nextInt();

b=sc.nextInt();

System.out.println(a\*b);

  }

}

**Q3.** .Write a Java program to print the sum (addition), multiply, subtract, divide and remainder of two numbers.

**Ans** import java.util.\*;

public class Assignment

{

    public static void main(String args[])

    {

        Scanner sc=new Scanner(System.in);

int a,b;

System.out.println("Enter the 2 numbers");

a=sc.nextInt();

b=sc.nextInt();

System.out.println("Addition = "+(a+b));

System.out.println("Substraction = "+(a-b));

System.out.println("Multiplication = " +(a\*b));

System.out.println("Division = " + (float)(a/b));

System.out.println("Reminder = "+(a%b));

  }

}

**Q4.** Write a Java program that takes a number as input and prints its multiplication table upto 10.

**Ans**

import java.util.\*;

public class Assignment

{

    public static void main(String args[])

    {

        Scanner sc=new Scanner(System.in);

        int num1;

        System.out.println("Enter any number");

        num1=sc.nextInt();

        for (int i=0; i< 10; i++){

            System.out.println(num1 + " x " + (i+1) + " = " +

              (num1 \* (i+1)));

  }

}

}

**Q5.** 5.Write a Java program to print the area and perimeter of a circle.

**Ans.**

import java.util.\*;

public class Assignment

{

    public static void main(String args[])

    {

        Scanner sc=new Scanner(System.in);

        double r;

        System.out.println("Enter the radius of a circle");

        r=sc.nextDouble();

        System.out.println("Area of circle = "+(2.14\*r\*r));

        System.out.println("Circumference = "+(2\*2.14\*r));

  }

}

**Q6.** Write a Java program that takes three numbers as input to calculate and print the average of the numbers.

**Ans.**

import java.util.\*;

public class Assignment

{

    public static void main(String args[])

    {

        Scanner sc=new Scanner(System.in);

         float a,b,c;

         System.out.println("Enter the 3 numbers ");

         a=sc.nextFloat();

         b=sc.nextFloat();

         c=sc.nextFloat();

         System.out.println("Average of 3 numbers = " + ((a+b+c)/3));

  }

}

**Q7.** 7.Write a Java program to add two binary numbers

**Ans**

import java.util.\*;

public class Assignment

{

    public static void main(String args[])

    {

        Scanner sc=new Scanner(System.in);

         long b1,b2;

         int i = 0, carry = 0;

    //This is to hold the output binary number

    int[] sum = new int[10];

         System.out.println("Enter the 2 numbers ");

         b1=sc.nextLong();

         b2=sc.nextLong();

         while (b1 != 0 || b2 != 0)

         {

             sum[i++] = (int)((b1 % 10 + b2 % 10 + carry) % 2);

             carry = (int)((b1 % 10 + b2 % 10 + carry) / 2);

             b1 = b1 / 10;

             b2 = b2 / 10;

         }

         if (carry != 0) {

             sum[i++] = carry;

         }

         --i;

         System.out.print("Output: ");

         while (i >= 0) {

             System.out.print(sum[i--]);

         }

         System.out.print("\n");

  }

}

**Q8.** 8.Write a Java program to multiply two binary numbers.

**Ans**

import java.util.Scanner;

public class Assignment {

  static long calc(long b1, long b2) {

    int i = 0;

    long rmndr = 0;

    long result = 0;

    long[] sum = new long[20];

    while (b1 != 0 || b2 != 0) {                  //actual multiplying process-heart of this program

      sum[i++] = (b1 % 10 + b2 % 10 + rmndr) % 2;

      rmndr = (b1 % 10 + b2 % 10 + rmndr) / 2;

      b1 = b1 / 10;

      b2 = b2 / 10;

    }

    if (rmndr != 0) {

      sum[i++] = rmndr;

    }--i;

    while (i >= 0) {                              //forming the result

      result = result \* 10 + sum[i--];

    }

    return result;

  }

  public static void main(String[] args) {

    long b1, b2, m = 0;

    long d, f = 1;

    Scanner sc = new Scanner(System.in);

    System.out.println("Enter A: ");

    b1 = sc.nextLong();

    System.out.println("\nEnter B: ");

    b2 = sc.nextLong();

    while (b2 != 0) {

      d = (b2 % 10);

      if (d == 1) {

        b1 = b1 \* f;

        m = calc(b1, m);

      } else {

        b1 = b1 \* f;

      }

      b2 = b2 / 10;

      f = 10;

    }

    System.out.println("\nA X B is: " + m + "\n");

  }

}

**Q9.** 9.Write a Java program to convert a decimal number to binary number.

**Ans.** import java.util.\*;

public class Assignment

{ public static void main(String[] args) {

    // binary number

    long num = 110110111;

    // call method by passing the binary number

    int decimal = convertBinaryToDecimal(num);

    System.out.println("Binary to Decimal");

    System.out.println(num + " = " + decimal);

  }

  public static int convertBinaryToDecimal(long num) {

    int decimalNumber = 0, i = 0;

    long remainder;

    while (num != 0) {

      remainder = num % 10;

      num /= 10;

      decimalNumber += remainder \* Math.pow(2, i);

      ++i;

    }

    return decimalNumber;

  }

}

**Q10.** 0.Write a Java program to convert a binary number to decimal number.

**Ans.**

import java.util.\*;

public class Assignment

{ public static void main(String[] args) {

    // binary number

    long num = 110110111;

    // call method by passing the binary number

    int decimal = convertBinaryToDecimal(num);

    System.out.println("Binary to Decimal");

    System.out.println(num + " = " + decimal);

  }

  public static int convertBinaryToDecimal(long num) {

    int decimalNumber = 0, i = 0;

    long remainder;

    while (num != 0) {

      remainder = num % 10;

      num /= 10;

      decimalNumber += remainder \* Math.pow(2, i);

      ++i;

    }

    return decimalNumber;

  }

}