

## PP PROJECT

```
import java.util.Scanner;
```

```
//gcd function is defined to find gcd of two numbers
```

```
class gcd
{
    int divisor(int first , int second)
    {
        int gcd_result=1;
        for(int i=1;i<=first && i<=second;i++)
        {
            if(first%i==0 && second%i==0)
            gcd_result=i;
        }
        return gcd_result;
    }
}
```

```
//first function binary is defined to convert gcd of respective teams to binary
```

```
class binary
{
    int rem2;
    int i=1;
    int binary_result=0;
    int convertToBinary(int n)
    {
        while( n!=0)
        {
            rem2=n%2;
            n=n/2;
            binary_result+=rem2*i;
            i=i*10;
        }

        return binary_result;
    }
}
```

```
//a function is defined to find no of ones in respective binary of team1 and team2
```

```
class countNumberOfOnes
{
    int rem1;
    int sumones=0;
    int count(int n)
```

```

{
    while(n!=0){
        rem1=n%10;
        if(rem1==1)
        {
            sumones+=1;
        }

        n=n/10;
    }
    return sumones;
}
}

```

//a function is defined to find no of zeroes in respective gcds of team1 and team2

```

class countNumberOfZeroes
{
    int rem3;
    int sumZeroes=0;
    int count1(int n)
    {
        while(n!=0){
            rem3=n%10;
            if(rem3!=1)
            {
                sumZeroes+=1;
            }

            n=n/10;
        }
        return sumZeroes;
    }
}

```

//a function is defined to make imaginary matrix of order num1 and num2

```

class matrix
{
    int attempt=0;

    int reach(int rows,int columns,int horiz, int vert)
    {

        for(int i=0;i<rows;i=i+horiz)
        {
            for(int j=0;j<columns;j=j+vert)
            {

```

```

        attempt+=1;
    }

}
return attempt;
}
}

```

//main function

```

class main{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);

        //two numbers of first team

        System.out.println("first team:");
        System.out.println("enter first number");
        int num1=sc.nextInt();
        System.out.println("enter second number");
        int num2=sc.nextInt();

        //two numbers of second team
        System.out.println("second team:");
        System.out.println("enter first number");
        int num3=sc.nextInt();
        System.out.println("enter second number");
        int num4=sc.nextInt();

        //object of gcd class to find gcd of first team numbers
        gcd obj1=new gcd();

        //object of gcd class to find gcd of second team numbers
        gcd obj2=new gcd();

        //storing values from divisor method to gcd_result1
        int gcd_result1=obj1.divisor(num1,num2);
        //storing values from divisor method to gcd_result2
        int gcd_result2=obj2.divisor(num3,num4);

        System.out.print("The gcd of num1 and num2 for first team is :");
        System.out.println(gcd_result1);
        System.out.print("The gcd of num1 and num2 for second team is :");
        System.out.println(gcd_result2);

        //creating object of binary class
        binary obj3=new binary();
        //obj3.convertToBinary(result1);
        binary obj4=new binary();
    }
}

```

```

// obj4.convertToBinary(result2);

//Storing values int
int binaryresult1=obj3.convertToBinary(gcd_result1);
int binaryresult2=obj4.convertToBinary(gcd_result2);

System.out.println("binary of result1/first team is :");
System.out.println(binaryresult1);

System.out.println("binary of result2/second team is :");
System.out.println(binaryresult2);

//making object of countNumberOfOnes class to count no of ones

countNumberOfOnes obj5=new countNumberOfOnes();
int ones1=obj5.count(binaryresult1);

countNumberOfOnes obj6=new countNumberOfOnes();
int ones2=obj6.count(binaryresult2);

//making object of countNumberOfZeroes class to count no of zeroes

countNumberOfZeroes obj7=new countNumberOfZeroes();
int Zeroes1=obj7.count1(binaryresult1);

countNumberOfZeroes obj8=new countNumberOfZeroes();
int Zeroes2=obj8.count1(binaryresult2)

System.out.println("ones of result1/first team is :");
System.out.println(ones1);
System.out.println("zeroes of result1/first team is :");
System.out.println(Zeroes1);

//System.out.println("tannu");

System.out.println("ones of result2/second team is :");
System.out.println(ones2);
System.out.println("zeroes of result2/second team is :");
System.out.println(Zeroes2);

System.out.println("are you ready to see the results?");
String ready=sc.next();

// making object of matrix class

matrix obj9=new matrix();
int attempt1=obj9.reach(num1,num3,ones1,Zeroes1);

matrix obj10=new matrix();

```

```
int attempt2=obj10.reach(num1,num3,ones2,Zeroes2);

    System.out.println("attempts of result1/first team is :");
    System.out.println(attempt1);
    System.out.println("attempts of result2/second team is :");
    System.out.println(attempt2);

    if(attempt1>attempt2)
    {
        System.out.println("winner is second team");
    }
    else if (attempt1<attempt2)
    {
        System.out.println("winner is first team");
    }
    else{
        System.out.println("both are winners");
    }

}
}
```

**Output**

```
1 error
PS D:\javafiles> javac gcd.java
PS D:\javafiles> java main
first team: 
enter first number
46
enter second number
2
second team:
enter first number
5
enter second number
10
The gcd of num1 and num2 for first team is :2
The gcd of num1 and num2 for second team is :5
binary of result1/first team is :
10
binary of result2/second team is :
101
ones of result1/first team is :
1
zeroes of result1/first team is :
1
ones of result2/second team is :
2
zeroes of result2/second team is :
1
are you ready to see the results?
y
attempts of result1/first team is :
230
attempts of result2/second team is :
115
winner is second team
PS D:\javafiles>
```