

Create a calculator to work with rational numbers.

Requirements:

- It should provide capability to add, subtract, divide and multiply rational Numbers
- Create a method to compute GCD (this will come in handy during operations on rational)

Add option to work with whole numbers which are also rational numbers i.e. (n/1)

- achieve the above using auxiliary constructors
- enable method overloading to enable each function to work with numbers and rational.

Code-

```
class Rational(n1:Int,n2:Int){

    def this(n:Int)=this(n,1)
    val g=gcd(n1.abs,n2.abs)
    var numer=n1/g
    var denom=n2/g
    private def gcd(n1:Int,n2:Int):Int= if (n2==0) n1 else gcd(n2,n1%n2)
    def add(r1:Rational,r2:Rational):Rational=new
Rational(r1.numer*r2.denom+r1.denom*r2.numer,r1.denom*r2.denom)
    def sub(r1:Rational,r2:Rational):Rational=new Rational(r1.numer*r2.denom-
r1.denom*r2.numer,r1.denom*r2.denom)
    def mul(r1:Rational,r2:Rational):Rational=new
Rational(r1.numer*r2.numer,r1.denom*r2.denom)
    def div(r1:Rational,r2:Rational):Rational=new
Rational(r1.numer*r2.denom,r1.denom*r2.numer)
    override def toString = numer+"/"+denom
}

object Calculator {
    def main(args:Array[String]) {
        var num1=new Rational(2,5)
        var num2=new Rational(3)
        println("1st Rational Number:"+num1)
        println("2nd Rational Number:"+num2)
        println("Addition:"+num1.add(num1,num2))
        println("Subtraction:"+num1.sub(num1,num2))
        println("Multiplication:"+num1.mul(num1,num2))
        println("Divison:"+num1.div(num1,num2))
    }
}
```

Output:-

```
object Calculator {  
  def main(args:Array[String]) {  
    var num1=new Rational(2,5)  
    var num2=new Rational(3,6)  
    println("1st Rational Number:"+num1)  
    println("2nd Rational Number:"+num2)  
    println("Addition:"+num1.add(num1,num2))  
    println("Substraction:"+num1.sub(num1,num2))  
    println("Multiplication:"+num1.mul(num1,num2))  
    println("Divison:"+num1.div(num1,num2))  
  }  
}
```

Problems Tasks Console Scala Interpreter (Scala_Project1)

<terminated> Calculator\$ [Scala Application] C:\Program Files\Java\jre1.8.0_191\bin\javaw.exe (27-Jan-2

```
1st Rational Number:2/5  
2nd Rational Number:1/2  
Addition:9/10  
Substraction:-1/10  
Multiplication:1/5  
Divison:4/5
```