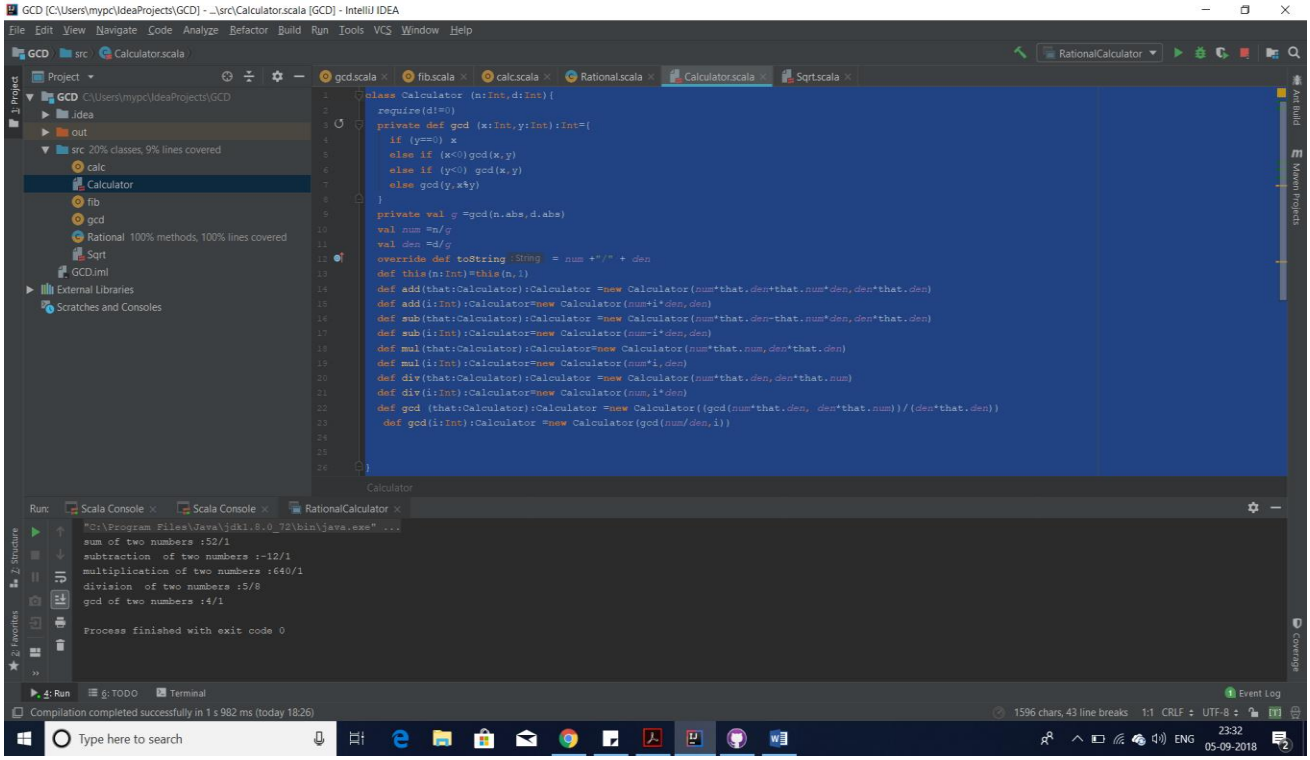
Assignment 16

```
class Calculator (n:Int,d:Int){
  require(d!=0)
  private def gcd (x:Int,y:Int):Int={
    if (y==0) x
    else if (x<0)gcd(x,y)
    else if (y<0) gcd(x,y)
    else gcd(y,x%y)
  }
  private val g =gcd(n.abs,d.abs)
  val num =n/g
  val den =d/g
  override def toString = num +"/" + den
  def this(n:Int)=this(n,1)
  def add(that:Calculator):Calculator =new Calculator(num*that.den+that.num*den,den*that.den)
  def add(i:Int):Calculator=new Calculator(num+i*den,den)
  def sub(that:Calculator):Calculator =new Calculator(num*that.den-that.num*den,den*that.den)
  def sub(i:Int):Calculator=new Calculator(num-i*den,den)
  def mul(that:Calculator):Calculator=new Calculator(num*that.num,den*that.den)
  def mul(i:Int):Calculator=new Calculator(num*i,den)
  def div(that:Calculator):Calculator =new Calculator(num*that.den,den*that.num)
  def div(i:Int):Calculator=new Calculator(num,i*den)
  def gcd (that:Calculator):Calculator =new Calculator((gcd(num*that.den,
den*that.num))/(den*that.den))
   def gcd(i:Int):Calculator =new Calculator(gcd(num/den,i))



}
```

```
object RationalCalculator {
  def main(args:Array[String]):Unit= {
    val num1 = new Calculator(20)
    val num2 = new Calculator(32)
    val sum = num1.add(num2)
    val sub_1 = num1.sub(num2)
    val mul_1 = num1.mul(num2)
    val div_1 = num1.div(num2)
    val gcd_1 = num1.gcd(num2)
    println("sum of two numbers :" + sum)
    println("subtraction  of two numbers :" + sub_1)
    println("multiplication of two numbers :" + mul_1)
    println("division  of two numbers :" + div_1)
    println("gcd of two numbers :" + gcd_1)
  }
  }
```


GCD [C:\Users\mypc\IdeaProjects\GCD] - ...\src\Calculator.scala [GCD] - IntelliJ IDEA
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
GCD src Calculator.scala
RationalCalculator
Project
GCD C:\Users\mypc\IdeaProjects\GCD
.idea
out
src 20% classes, 9% lines covered
calc
Calculator
fib
gcd
Rational 100% methods, 100% lines covered
Sqrt
GCD.iml
External Libraries
Scratches and Consoles
gcd.scala
fib.scala
calc.scala
Rational.scala
Calculator.scala
Sqrt.scala
class Calculator (n:Int,d:Int){
require(d!=0)
private def gcd (x:Int,y:Int):Int={
if (y==0) x
else if (x<0)gcd(x,y)
else if (y<0) gcd(x,y)
else gcd(y,x%y)
}
private val g =gcd(n.abs,d.abs)
val num =n/g
val den =d/g
override def toString :String = num +"/" + den
def this(n:Int)=this(n,1)
def add(that:Calculator):Calculator =new Calculator(num*that.den+that.num*den,den*that.den)
def add(i:Int):Calculator=new Calculator(num+i*den,den)
def sub(that:Calculator):Calculator =new Calculator(num*that.den-that.num*den,den*that.den)
def sub(i:Int):Calculator=new Calculator(num-i*den,den)
def mul(that:Calculator):Calculator=new Calculator(num*that.num,den*that.den)
def mul(i:Int):Calculator=new Calculator(num*i,den)
def div(that:Calculator):Calculator =new Calculator(num*that.den,den*that.num)
def div(i:Int):Calculator=new Calculator(num,i*den)
def gcd (that:Calculator):Calculator =new Calculator((gcd(num*that.den, den*that.num))/(den*that.den))
def gcd(i:Int):Calculator =new Calculator(gcd(num/den,i))
}
Calculator
Run: Scala Console Scala Console RationalCalculator
"C:\Program Files\Java\jdk1.8.0_72\bin\java.exe" ...
sum of two numbers :52/1
subtraction of two numbers :-12/1
multiplication of two numbers :640/1
division of two numbers :5/8
gcd of two numbers :4/1
Process finished with exit code 0
4: Run 6: TODO Terminal
Event Log
Compilation completed successfully in 1 s 982 ms (today 18:26)
1596 chars, 43 line breaks 1:1 CRLF UTF-8
Type here to search
ENG
23:32
05-09-2018