# **Assignment 16**

#### Task1

### <u>Create a calculator to work with rational numbers.</u>

```
//With auxilary constructor
class Calc (a:Int, b:Int) {
 def this (a:Int) = this (a,2);
 def sum() : Int = a+b;
 def sub() : Int = a-b;
 def mul() : Int = a*b;
 def div() : Int = a/b;
 def gcd(a: Int,b: Int): Int = {
    if(b ==0) a else gcd(b, a%b)
 }
  }
object Calc{
 def main(args: Array[String]) {
  val cal2 = new Calc(7);
  println("Addition =" + cal2.sum());
  println("Difference =" + cal2.sub());
  println("Product =" + cal2.mul());
  println("Division =" + cal2.div());
  println("GCD = " + cal2.gcd(25,15));
}
}
```

### //method overloading

```
class Calc2 {
 def sum(a:Int, b:Int):Int =a+b;
 def sum(a:Int, b:Double) : Double = a+b;
 def sub(a:Int, b:Int):Int =a-b;
 def sub(a:Int, b:Double) : Double= a-b;
 def mul(a:Int,b:Int) : Int = a*b;
 def mul(a:Int, b:Double) : Double =a*b;
 def div(a:Int,b:Int) : Int = a/b;
 def div(a:Int, b:Double) : Double =a/b;
  }
object Calc2{
 def main(args: Array[String]) {
  val cal2 = new Calc2();
  println("Addition =" + cal2.sum(7,5));
  println("Addition with Double =" + cal2.sum(7,5.5));
  println("Difference =" + cal2.sub(7,5));
  println("Difference with Double =" + cal2.sub(7,5.5));
  println("Product =" + cal2.mul(3,2));
  println("Product with Double =" + cal2.mul(3,2.5));
  println("Division =" + cal2.div(6,3));
  println("Division with Double =" + cal2.div(6,3.0));
}
}
```

#### **Screenshots**

# //with auxiliary constructor

```
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    III Task3.scala

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                                      □ $ ▽
                                                            ⊖class Calc (a:Int, b:Int) {
                                                            def this (a:Int) = this (a,2);

def sum() : Int = a+b;

def sub() : Int = a-b;

def mul() : Int = a'b;

def div() : Int = a'b;

def gd(a: Int,b: Int): Int = {

    if(b ==0) a else gcd(b, a%b)

}
  > $\leftilde{\textit{ Assign_15}}$
$\sigma \textit{ Assign_16}$
$\sigma \textit{ Scala Library container [ 2.12.3 ]}$
$\sigma \textit{ JRE System Library [JavaSE-1.8]}$
         ■ JRE System Library [JavaSE-1.8]
  } }
@ object calc(
@ def main(args: Array[String]) {
    val cal2 = new Calc(');
    printin("new Cal2.sum());
    printin("new cal2.sum());
    printin("Product = " + cal2.sum());
    printin("Product = " + cal2.sum());
    printin("Stois = " + cal2.sum());
    printin("GCD = " + cal2.gcd(20,10));
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Addition =9
Difference =5
Product =14
Division =3
6CD = 5
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Calc.scala - Assign 16/sro
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```

## //method overloading

