```scala
package assignments

object Assign2 {

  def main(args: Array[String]): Unit = {

    //2.1 GCD application
    var obj1 = new gcd
    val a = 60
    val b = 36
    println(s"the GCD for two numbers $a and $b is " +
            obj1.getGcd(a, b))

    // 2.2 fibnoacci number task
    val fib_number = 10
    var obj2 = new Fibonacci
    obj2.listofFib(fib_number)
    var str = obj2.fibs.tail take fib_number mkString ""
    println("2:Recursion: Fibonacci String is : " + str)
    println(fib_number +
            "th digit in fibonacci string is : " +
             str.charAt(fib_number))

    //2.3 Babylonsqrt
    var obj3 = new Babylonsqrt
    val sqrtfor = 9
    println(s"The square root for the number $sqrtfor is "
            + obj3.getsqroot(sqrtfor))

  }

}

class gcd{
  def getGcd(a:Int,b:Int):Int =
    if (a == 0) b else getGcd(b%a, a)
}

class Fibonacci {

  // for loop
  def listofFib(count: Int): Unit = {
    var a = 0
    var b = 1
    var c = 0
    var limit = count - 1
```

```
    var list = new StringBuffer("")
    list.append(a + b)
    for (i <- 1 to limit) {
      c = a + b
      list.append(c)
      a = b
      b = c
    }
    println("Loop output: Fibonacci String is : " +
             list.toString())
    println(count + "th digit in fibonacci string is : " +
            list.toString().charAt(count))
  }

  // recursive call
  val fibs: Stream[Int] = 0 #:: fibs.scanLeft(1)(  +  )

}

class Babylonsqrt {

  def sqrtiter(guess:Double, x:Double):Double = {
    if (isGoodEnough(guess,x)) guess
    else sqrtiter(improveGuess(guess,x),x)
  }

  def isGoodEnough(guess:Double, x:Double) = math.abs(guess *guess -
x)/x < 0.001

  def improveGuess(guess:Double, x:Double):Double = (guess + x /
guess) / 2

  def getsqroot(num:Double):Double = sqrtiter(1,num)

}
```

Console Output:

```
the GCD for two numbers 60 and 36 is 12
Loop output: Fibonacci String is : 11235813213455
10th digit in fibonacci string is : 3
2:Recursion: Fibonacci String is : 11235813213455
10th digit in fibonacci string is : 3
The square root for the number 9 is 3.00009155413138
```