Assignment Submission- Session 15

Task 1: Create a Scala application to find the GCD of two numbers.

```
object GCD_Class {

  def main(args: Array[String]): Unit = {
    val num1 = 171
    val num2 = 76

    var gcd = 1
    for (x <- 2 to num2) {
        if ( num1%x==0 && num2%x==0 ) gcd =x
    }
    println("GCD is ="+gcd)
  }
}
```

Task 2:

Fibonacci series (starting from 1) written in order without any spaces in between, thus producing a sequence of digits.
Write a Scala application to find the Nth digit in the sequence.

➢ Write the function using standard for loop

```
object Fibonacci {

  def main(args: Array[String]): Unit = {
    var first = 1
    var second = 2
    println("Enter the term =")
    val term = scala.io.StdIn.readInt()
    var sum = 3
    for (x <- 1 to term-2 ) {
      sum = first + second
      first = second
      second = sum
    }
    println("Value of 7th term  "+ sum)
  }
}
```

➢ Write the function using recursion

```
object Fibonacci_Recursion {

  def main(args: Array[String]): Unit = {
    var first = 1
    var second = 2
    var count = 1
    var sum = 0
    println("Enter the term =")
    val term = scala.io.StdIn.readInt()
    def fib ( first : Int, second: Int ): Unit = {
```

```
      sum = first + second
      count +=1
      if (count<= term-2) {
        fib(second, sum)
      }
    }
    fib(first,second)
    println("Required term = "+ sum)
  }
}
```

Task 3

Find square root of number using Babylonian method.

1. Start with an arbitrary positive start value x (the closer to the root, the better).

2.Initialize y = 1.

3. Do following until desired approximation is achieved.

a) Get the next approximation for root using average of x and y

b) Set y = n/x