Session 13

Assignment 2 Questions

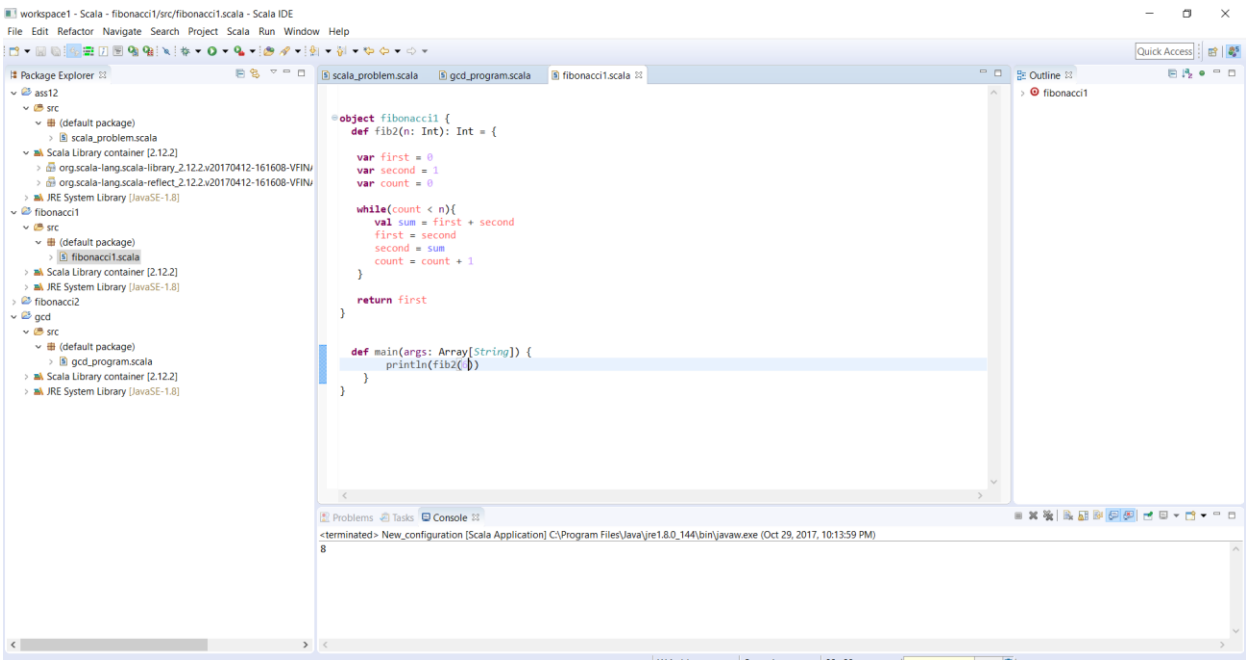
ACADGILD

Problem Statement

- ***A 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 loop***

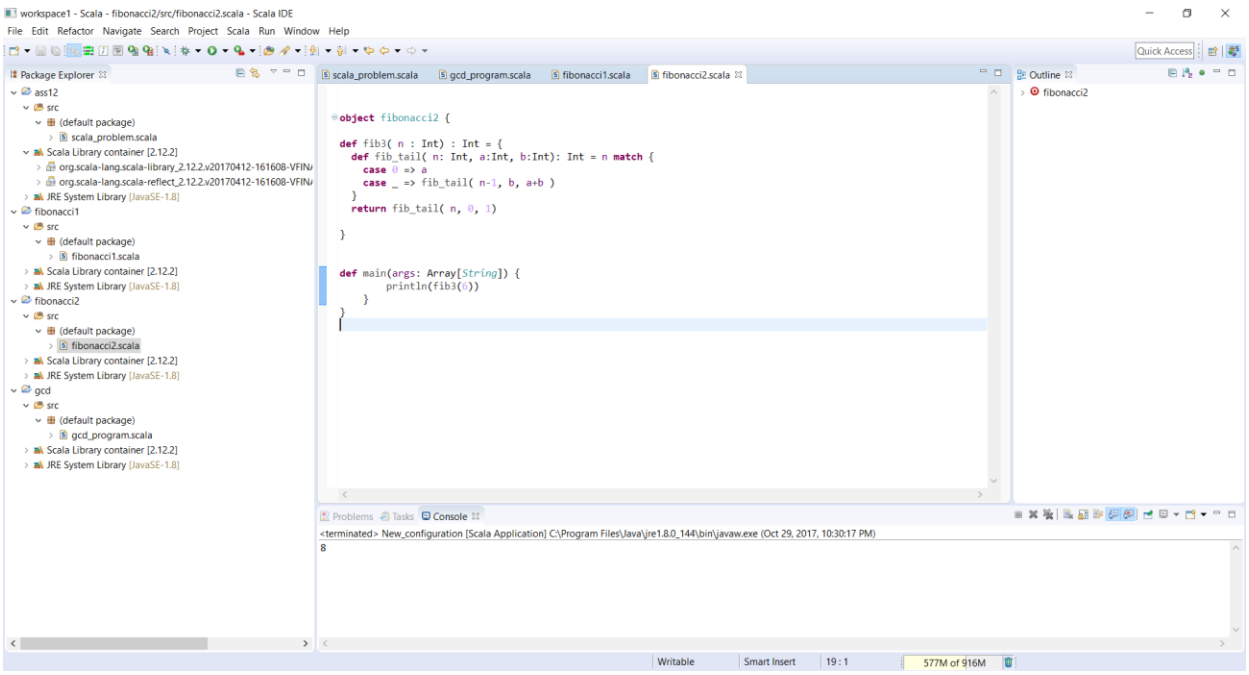



```
object fibonacci1 {
  def fib2(n: Int): Int = {

    var first = 0
    var second = 1
```

```
  var count = 0

  while(count < n){
    val sum = first + second
    first = second
    second = sum
    count = count + 1
  }

  return first
}


 def main(args: Array[String]) {
      println(fib2(6))
   }
}
```

Output :- 8

- ***Write the function using recursion***




```
object fibonacci2 {

def fib3( n : Int) : Int = {
  def fib_tail( n: Int, a:Int, b:Int): Int = n match {
```

```
    case 0 => a
    case _ => fib_tail( n-1, b, a+b )
  }
  return fib_tail( n, 0, 1)

}


def main(args: Array[String]) {
        println(fib3(6))
    }
}
```

Output:-8