Bigdata assignment 5.2

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 for loop
○ Write the function using recursion

Solution-

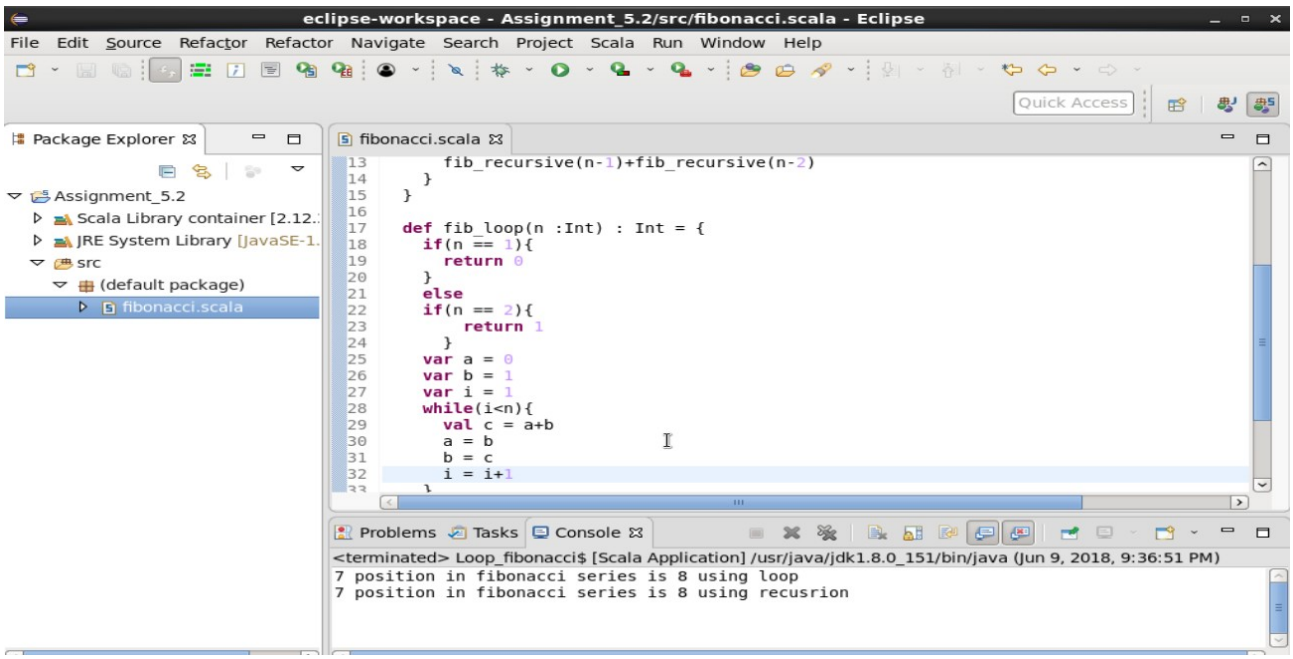
```
object Fibonacci {
  //recursive fibonacci function
  def fib_recursive(n: Int):Int = {
    if(n==1){
      0
    }
    else if(n==2){
      1
    }
    else {
      fib_recursive(n-1)+fib_recursive(n-2)//recursive call
    }
  }

  //fibonacci function using loop
  def fib_loop(n :Int) : Int = {
    if(n == 1){
      return 0
    }
    else
    if(n == 2){
       return 1
```

```
    }
   var a = 0
   var b = 1
   var i = 1
   while(i<n){//loop
    val c = a+b
    a = b
    b = c
    i = i+1
   }
   return a
 }
 def main(args: Array[String]){
   println(args(0)+" position in fibonacci series is
"+fib_loop(args(0).toInt)+" using loop")
   println(args(0)+" position in fibonacci series is
"+fib_recursive(args(0).toInt)+" using recusrion")
 }
}
```

Input - 7

Output -

From the below screenshot it , in the console we can see that the 7^{th} term in fibonacci series is 8. Both the output are same using function using loop and other using recursive function


eclipse-workspace - Assignment_5.2/src/fibonacci.scala - Eclipse
File Edit Source Refactor Refactor Navigate Search Project Scala Run Window Help
Quick Access
Package Explorer
Assignment_5.2
Scala Library container [2.12.
JRE System Library [JavaSE-1.
src
(default package)
fibonacci.scala
fibonacci.scala
13 fib_recursive(n-1)+fib_recursive(n-2)
14 }
15 }
16
17 def fib_loop(n :Int) : Int = {
18 if(n == 1){
19 return 0
20 }
21 else
22 if(n == 2){
23 return 1
24 }
25 var a = 0
26 var b = 1
27 var i = 1
28 while(i<n){
29 val c = a+b
30 a = b
31 b = c
32 i = i+1
Problems Tasks Console
<terminated> Loop_fibonacci$ [Scala Application] /usr/java/jdk1.8.0_151/bin/java (Jun 9, 2018, 9:36:51 PM)
7 position in fibonacci series is 8 using loop
7 position in fibonacci series is 8 using recusrion