**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 for loop
* Write the function using recursion

**Solution:**

//package declaration

**package** assignment13\_2

//importing scanner class for taking user input

**import** java.util.Scanner;

//scala object declaration

**object** Fibonacci

{

//Fibonacci Series Using Recursion

**def** fibo\_recursion(N :Int) :Int =

{

**if**(N==0) **return** 0

**else** **if**(N==1) **return** 1

**else** **return** (fibo\_recursion(N-1) + fibo\_recursion(N-2))

}//end of fibo\_recursion function definition

//Fibonacci Series Using Standard Method

**def** fibo\_standard(N: Int): Int =

{

**var** a = 0

**var** b = 1

**if**( N == 0) a

**else**

{

**for**(i <- 2 to N)

{

**val** c = a + b

a = b

b = c

}

b

}

}//end of fibo\_standard for loop function definition

}

**object** main{

**def** main(args: Array[*String*]) =

{

println(" -----------FIBONACCI SERIES-------------")

println("Enter the Nth digit in the sequence")

**var** input = scala.io.StdIn.readInt()

println("Fibonnaci Series Using Recursion Output:")

**var** First\_num = Fibonacci.fibo\_recursion(input)

println(First\_num)

println("Fibonacci Series Using Standard For Loop Output")

**var** Second\_num = Fibonacci.fibo\_standard(input)

println(Second\_num)

}

}

**Output:**

