**Assignment 13.2**

**Problem Statement**

A Fibonacci series (starting from 1) written in order without any spaces in between, thus producing a sequence of digits.

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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

Program

**package** com.assignment.fibonacci

//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

**object** FibonacciSeriesWithLoop {

**def** fibonacciSeries(n: Int): Int = {

**var** a = 0

**var** b = 1

**var** i = 0

**while** (i < n) {

**val** c = a + b

a = b

b = c

i = i + 1

}

**return** a;

}

**def** fib3(n: Int): Int = {

**def** fib\_tail(n: Int, a: Int, b: Int): Int = n **match** {

**case** 1 => a

**case** \_ => fib\_tail(n - 1, b, a + b)

}

**return** fib\_tail(n, 1, 1)

}

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

print("Fibonacci series with loop :\t ");

**var** n = 10

**for** (i <- 1 to n) {

print(fibonacciSeries(i));

}

println("\t");

print("Fibonacci series with recursion :\t ");

**for** (i <- 1 to n) {

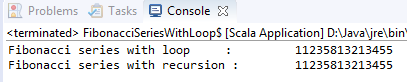
print(fib3(i));

}

}

}

**Console output**

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