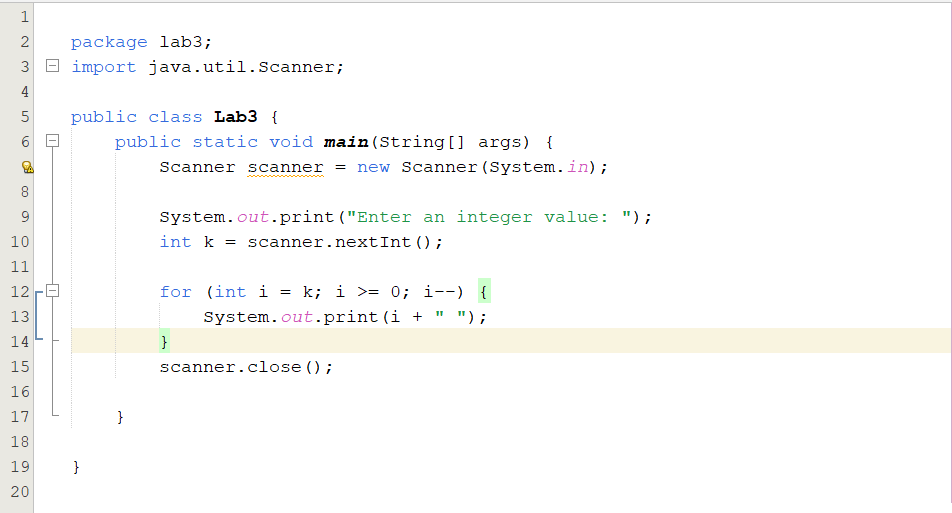
LAB # 03 RECURSION

**OBJECTIVE:** To understand the complexities of the recursive functions and a way to reduce these complexities.

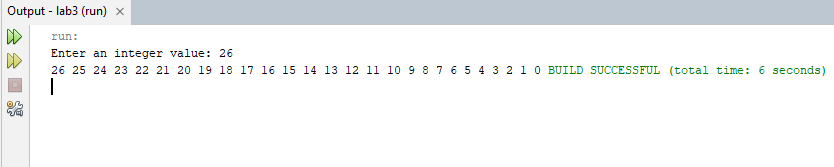
# LAB TASK

1. Write a program which takes an integer value (k) as input and prints the sequence of numbers from k to 0 in descending order.

**CODE:**

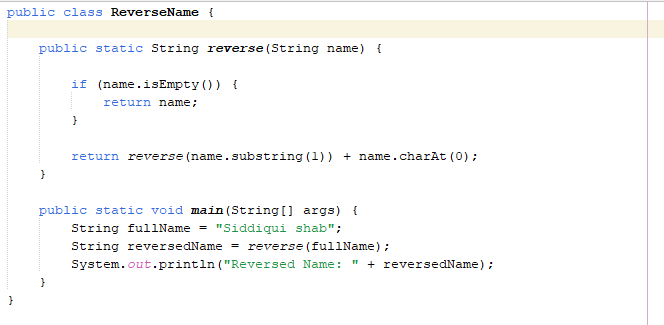


**OUTPUT:**

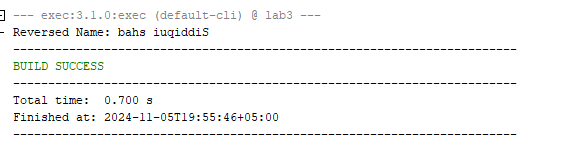


1. Write a program to reverse your full name using Recursion.

**CODE:**

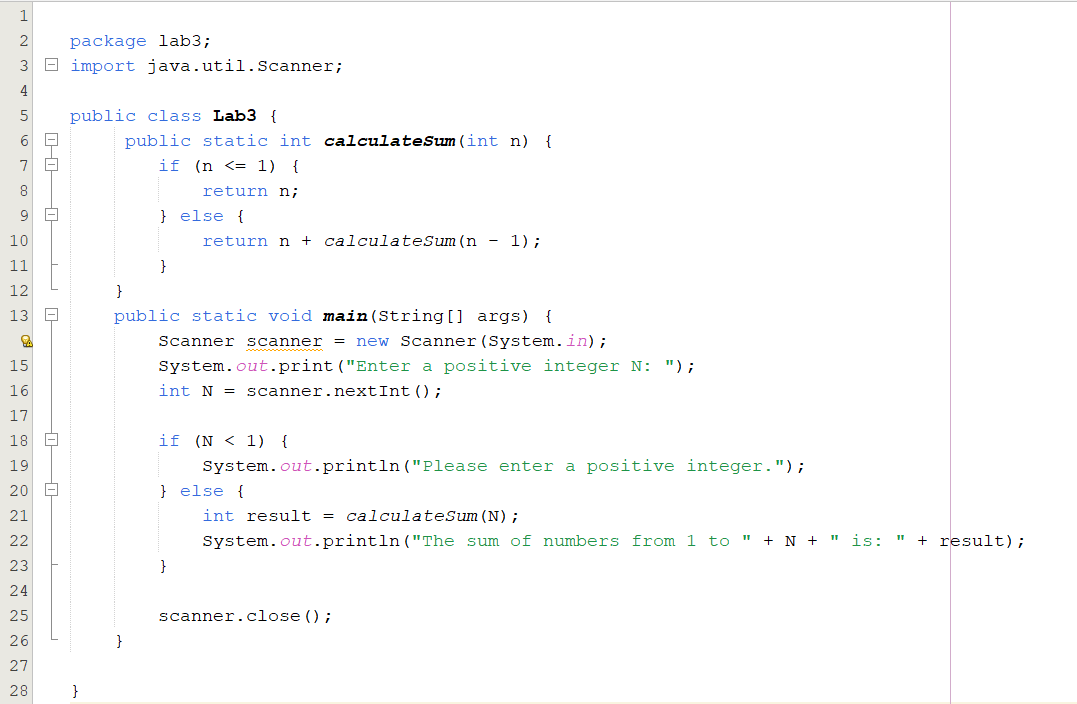
****

**OUTPUT:**

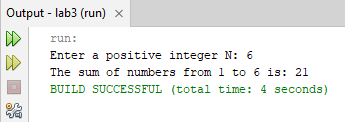
****

1. Write a program to calculate the sum of numbers from 1 to N using recursion. N should be user input.

**CODE:**

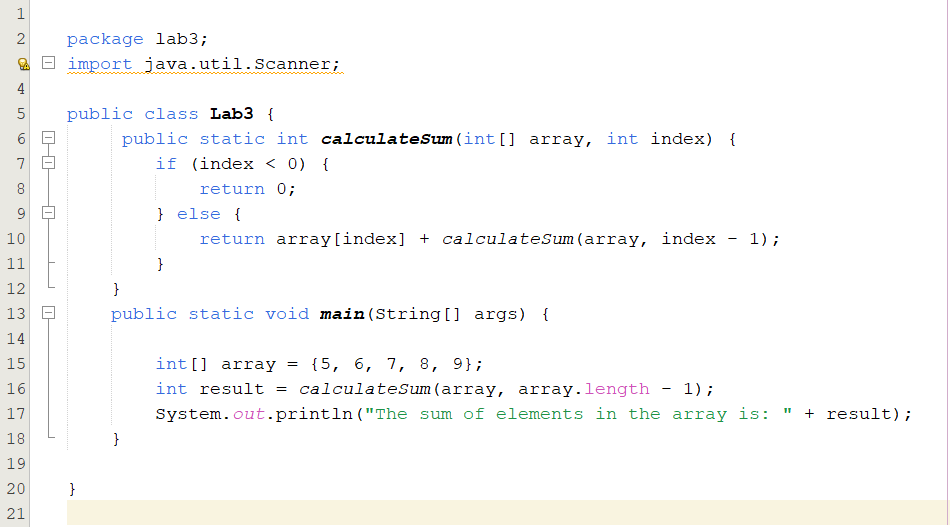


**OUTPUT:**

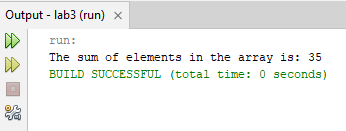


1. Write a recursive program to calculate the sum of elements in an array.

**CODE:**

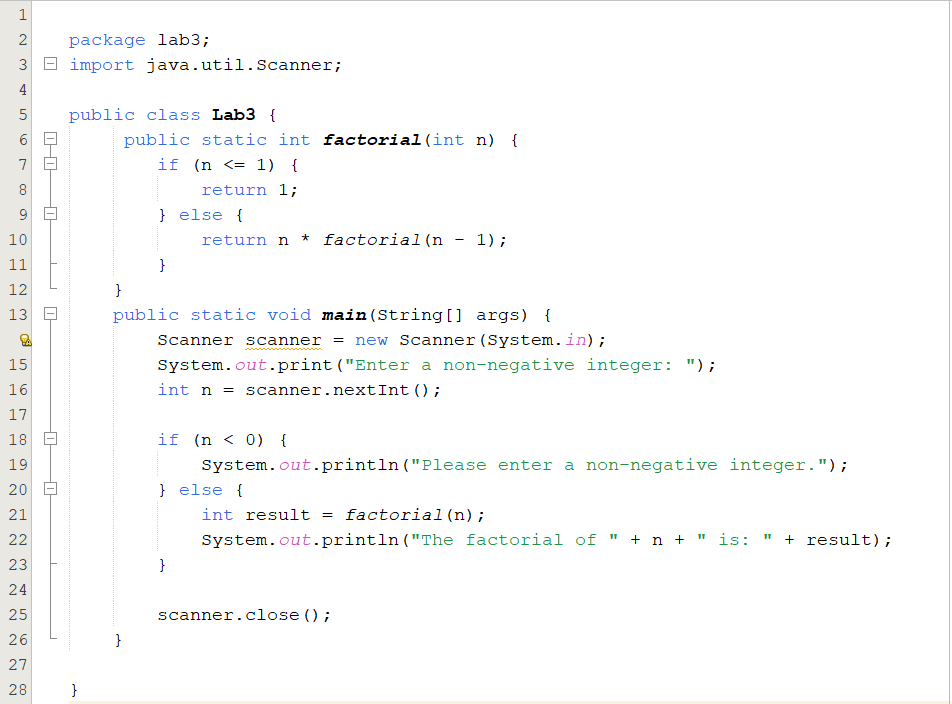


**OUTPUT:**

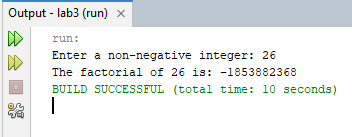


1. Write a recursive program to calculate the factorial of a given integer n.

**CODE:**

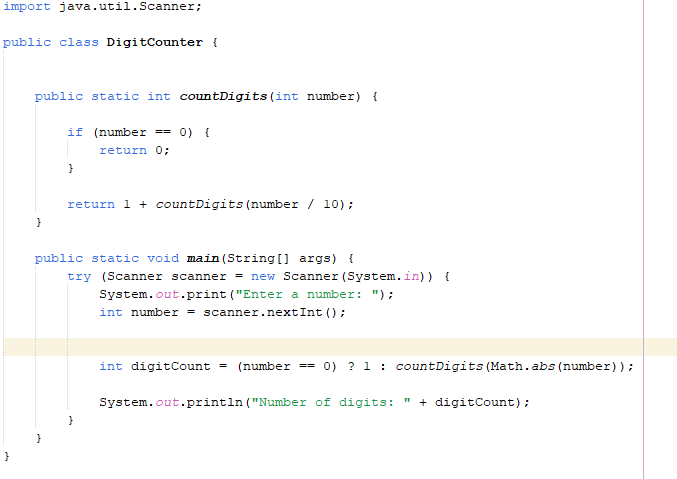


**OUTPUT:**

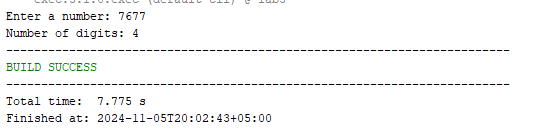


1. Write a program to count the digits of a given number using recursion.

**CODE:**

****

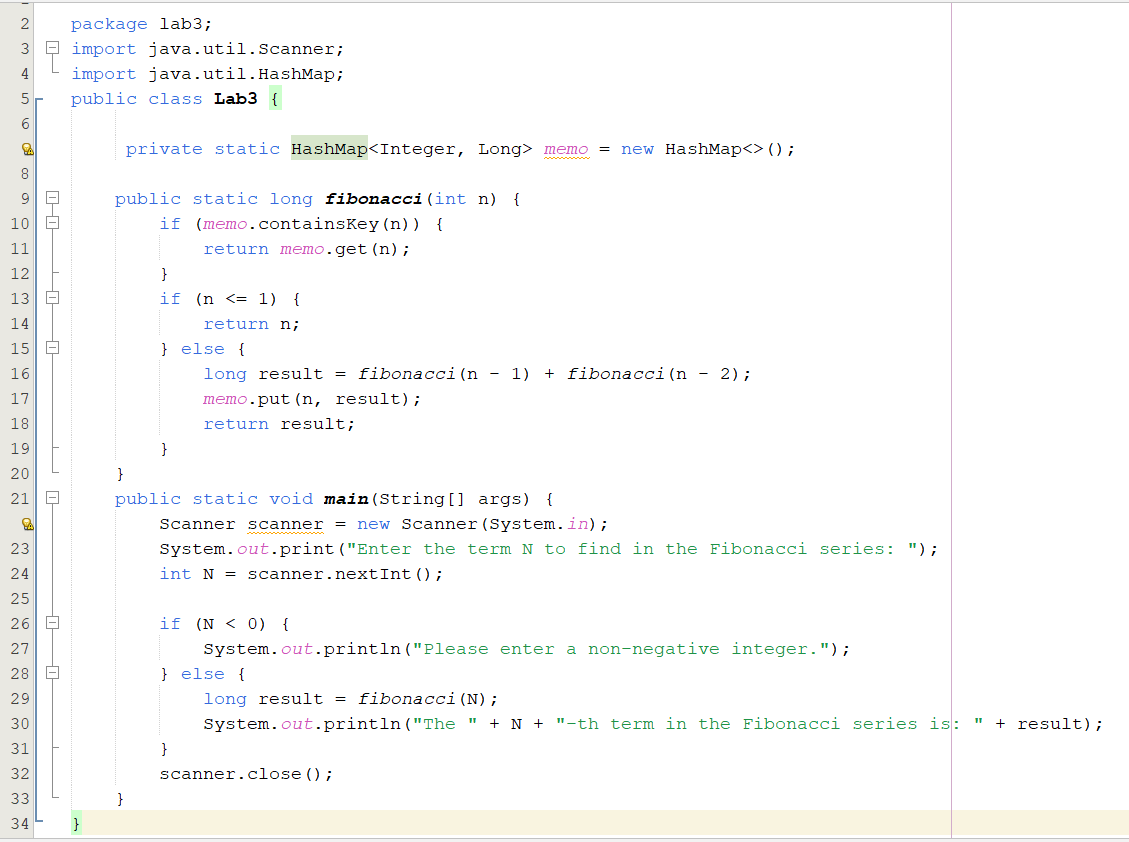
**OUTPUT:**

****

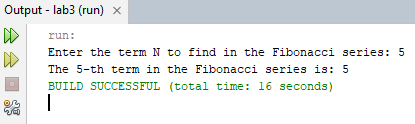
# HOME TASK

1. Write a java program to find the N-th term in the Fibonacci series using Memoization.

**CODE:**

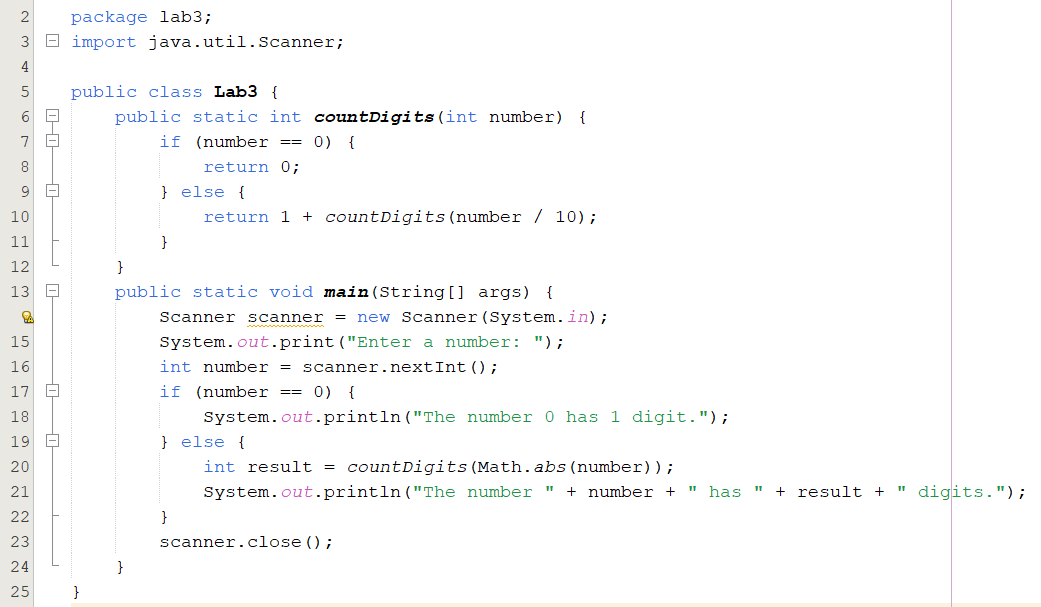


**OUTPUT:**

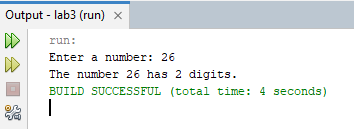


1. Write a program to count the digits of a given number using recursion.

**CODE:**



**OUTPUT:**

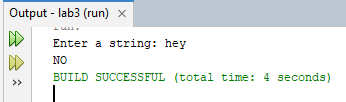


1. Write a java program to check whether a given string is a palindrome or not. A palindrome is a string that reads the same forwards and backwards.Print "YES" if the string is a palindrome, otherwise print "NO".

**CODE:**

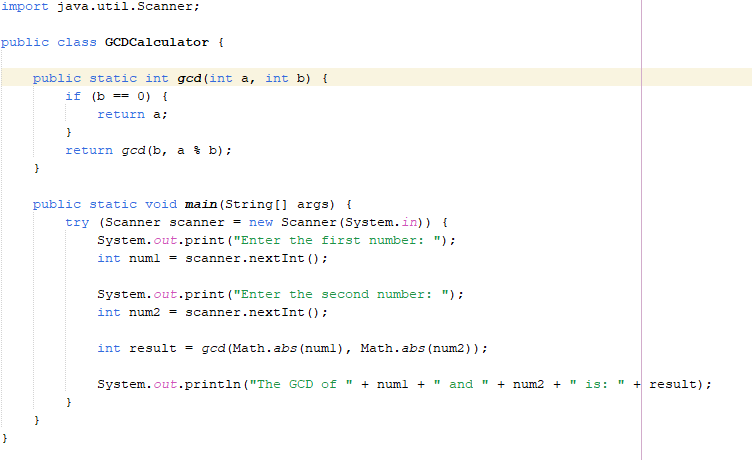


**OUTPUT:**

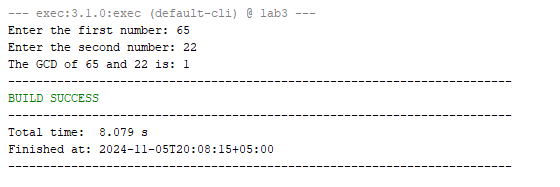


1. Write a recursive program to find the greatest common divisor (GCD) of two numbers using Euclid's algorithm.

**CODE:**

****

**OUTPUT:**

****