Lab#03 Recursion SSUET/QR/114

**LAB # 03**

**RECURSION**

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

You can see, we are not computing fibonacci number for 2 and 3 more than once.

# 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:**

**A screenshot of a computer code

Description automatically generated**

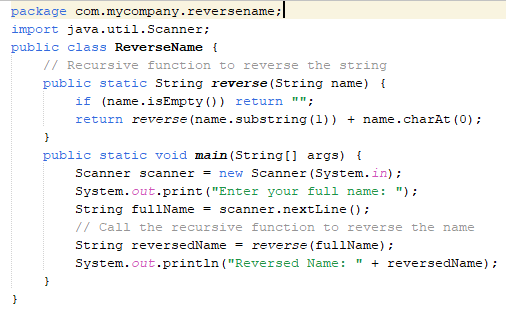
**Output:**

**A black text on a white background

Description automatically generated**

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

**Code:**

****

**Output:**

A close up of a name

Description automatically generated

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

**Code:**

**A screenshot of a computer code

Description automatically generated**

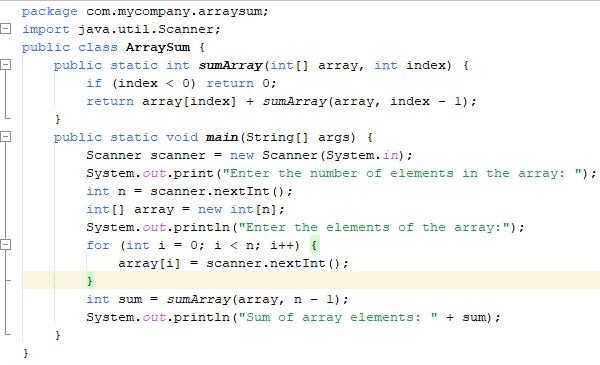
**Output:**

A close up of a white background

Description automatically generated

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

**Code:**

****

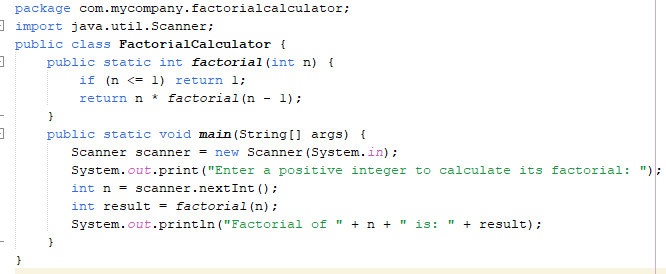
**Output:**

A white background with black text

Description automatically generated

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

**Code:**

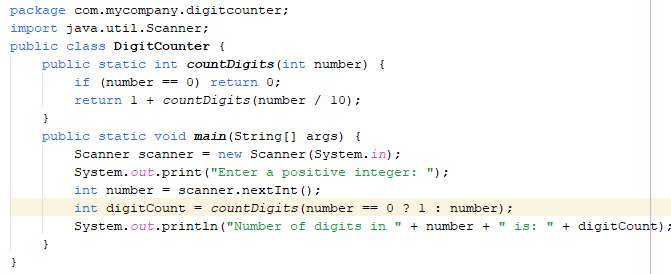
****

**Output:**



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

**Code:**

****

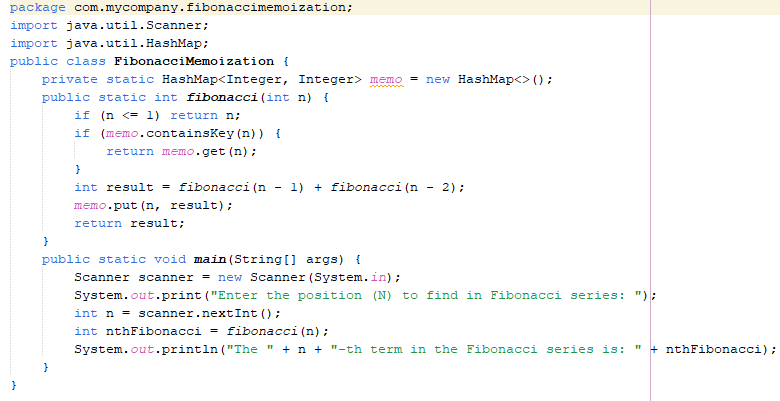
**Output:**



# 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:**

**A screenshot of a computer code

Description automatically generated**

**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:**

**A computer code with text

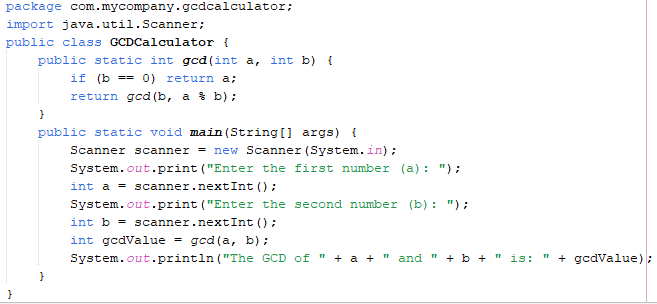
Description automatically generated**

**Output:**



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

**Code:**

****

**Output:**

