**LAB#3**

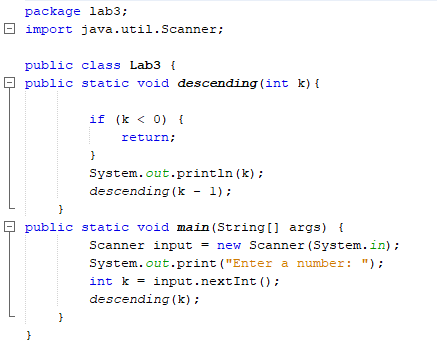
**RECURSION**

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

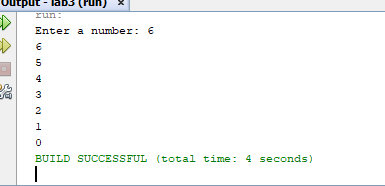
**LABTASKS:**

TASK#1:

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

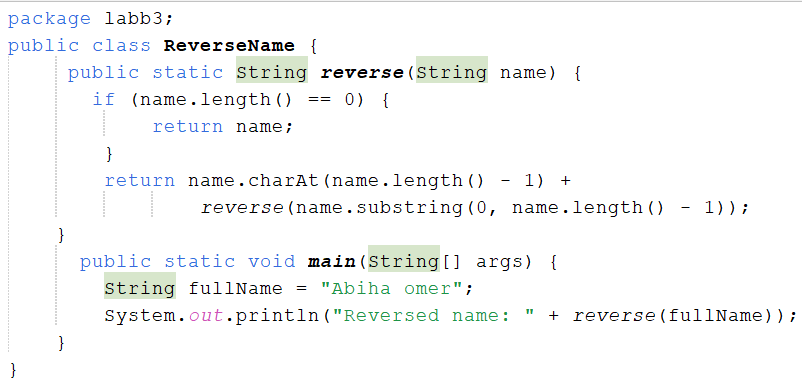


**OUTPUT:**

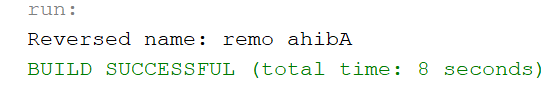


**TASK#2:**

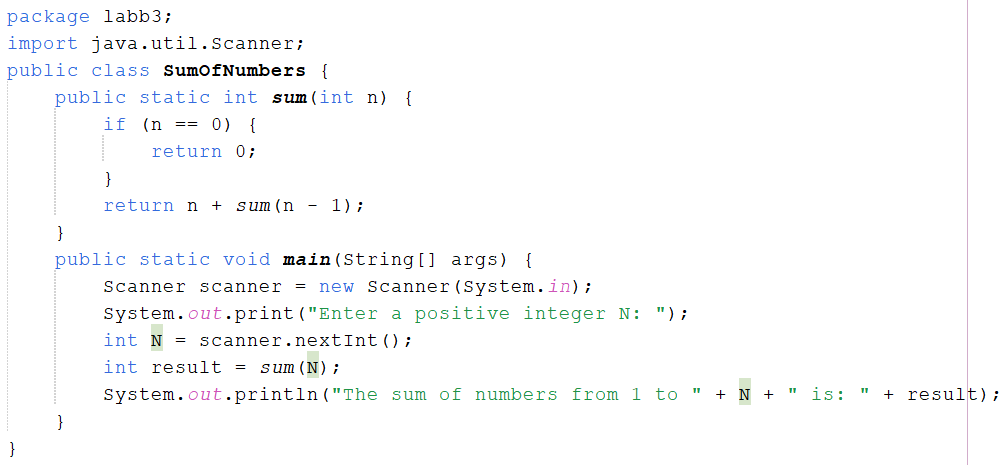
2. Write a program to reverse your full name using Recursion.



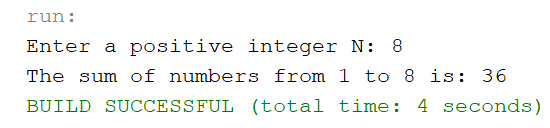
**OUTPUT:**



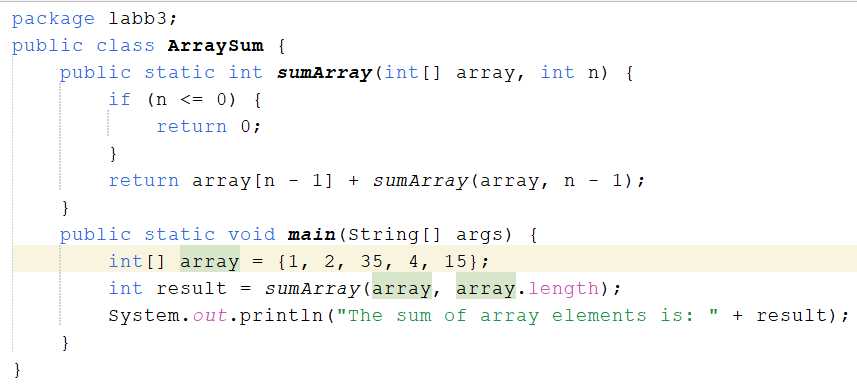
**TASK#3:**

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

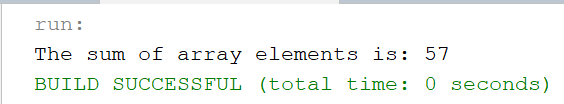
**Output:**



TASK#4:

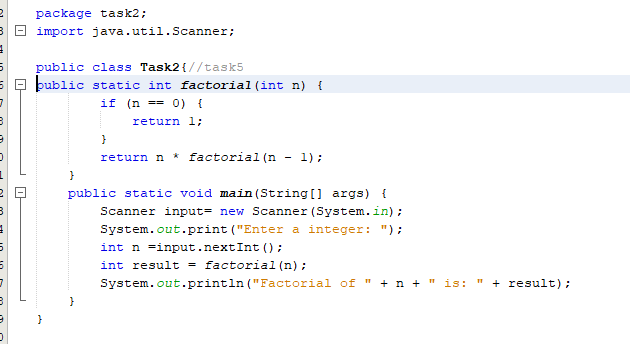
4. Write a recursive program to calculate the sum of elements in an array.

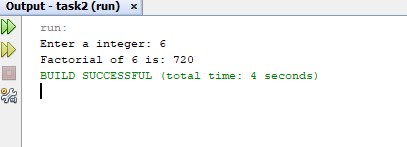
**Output:**



**Task#5:**

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

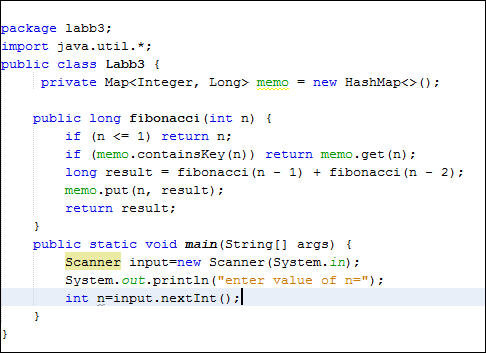




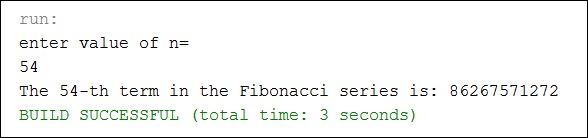
**HOME TASKS:**

**TASK#1:**

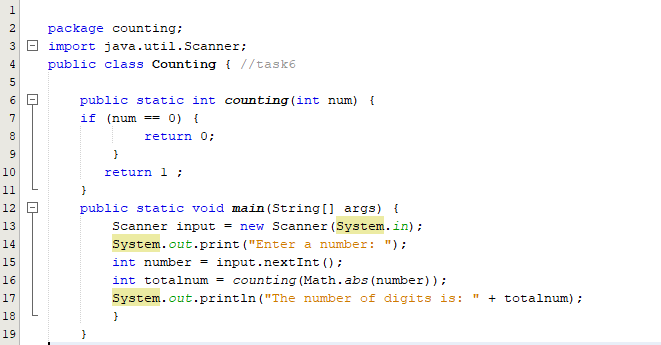
1. Write a java program to find the N-th term in the Fibonacci series using Memoization.

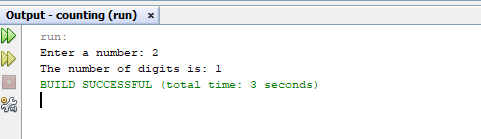


OUTPUT:



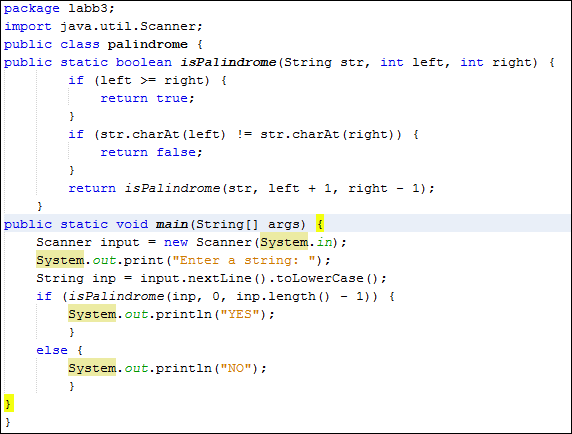
**TASK#2:**

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

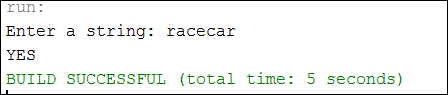


**TASK#3:**

3. 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".

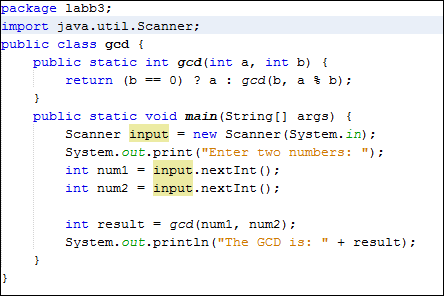


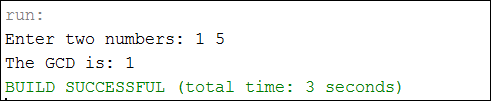
**OUTPUT:**



**TASK#4:**

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



**OUTPUT:**