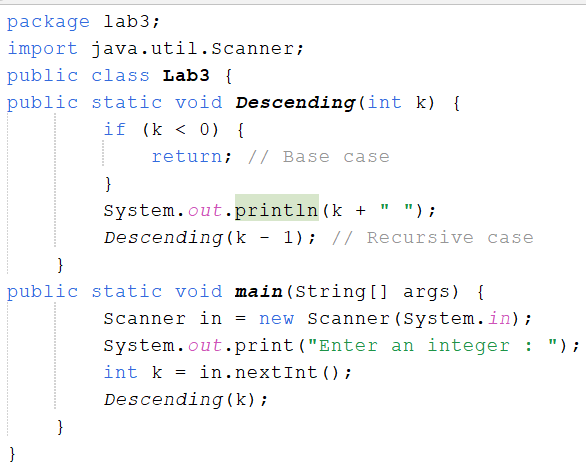
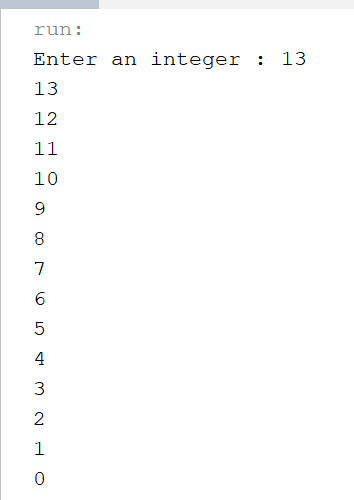
**LAB # 03**

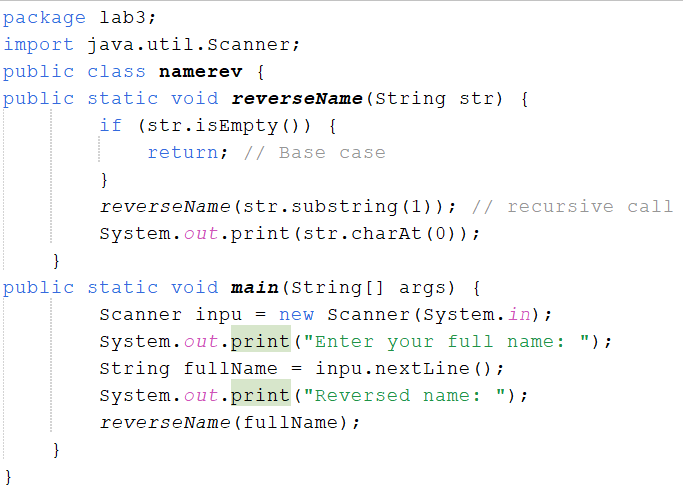
**RECURSION**

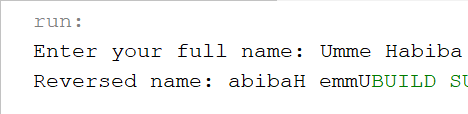
**OBJECTIVE:** To understand the complexities of the recursive functions and a way to reduce these complexities.

**LAB TASKS:**

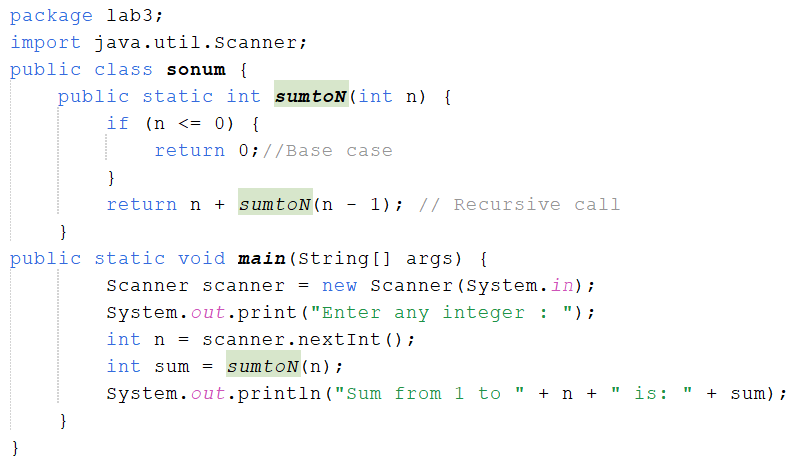
1. Write a program which takes an integer value (k) as input and prints the sequence of numbers from k to 0 in descending order.

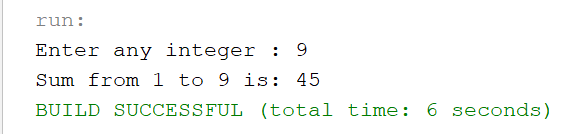


1. Write a program to reverse your full name using Recursion.

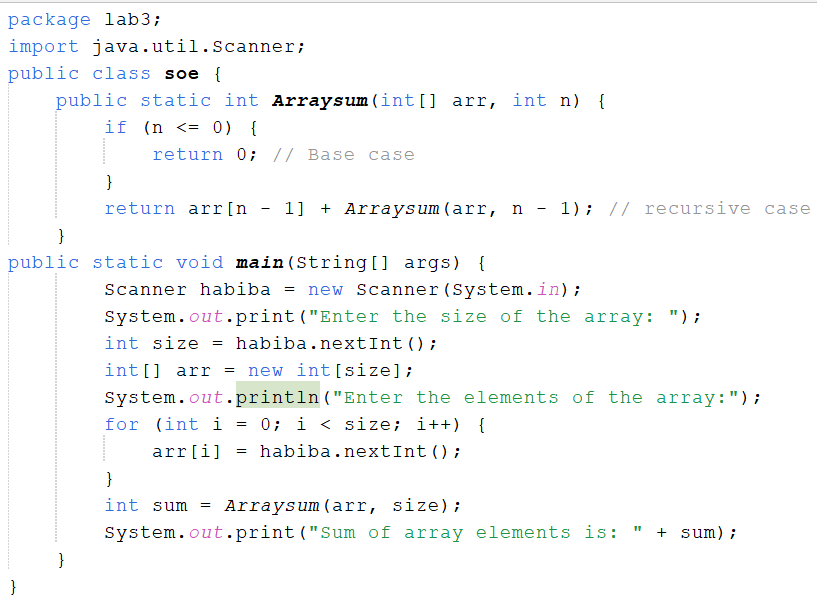


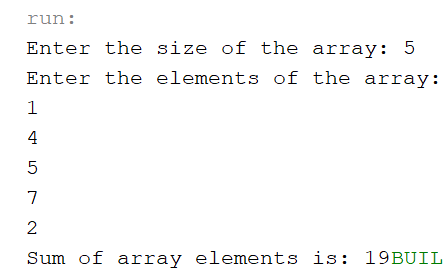
1. Write a program to calculate the sum of numbers from 1 to N using recursion. N should be user input.



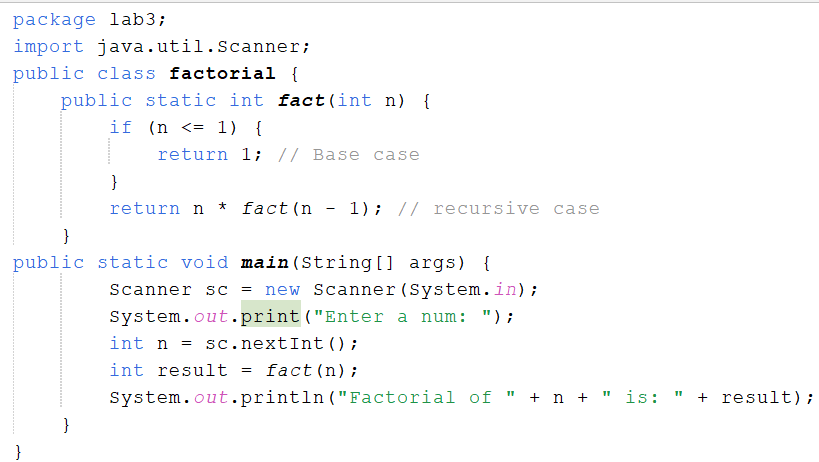


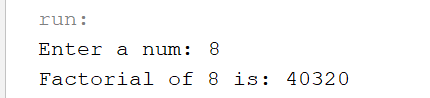
1. Write a recursive program to calculate the sum of elements in an array.





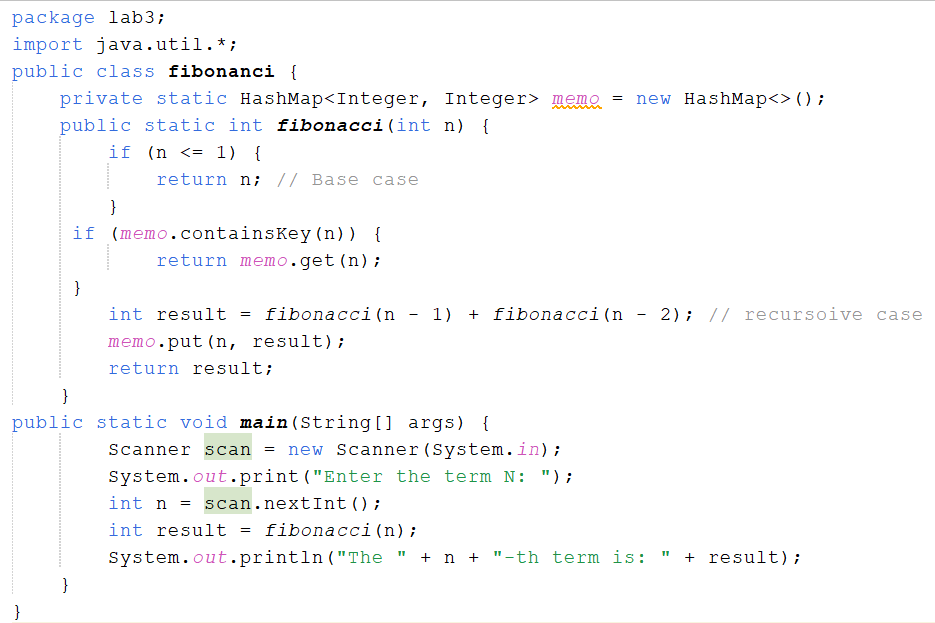
1. Write a recursive program to calculate the factorial of a given integer n.

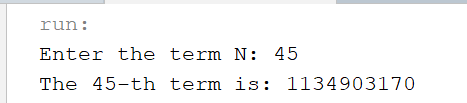


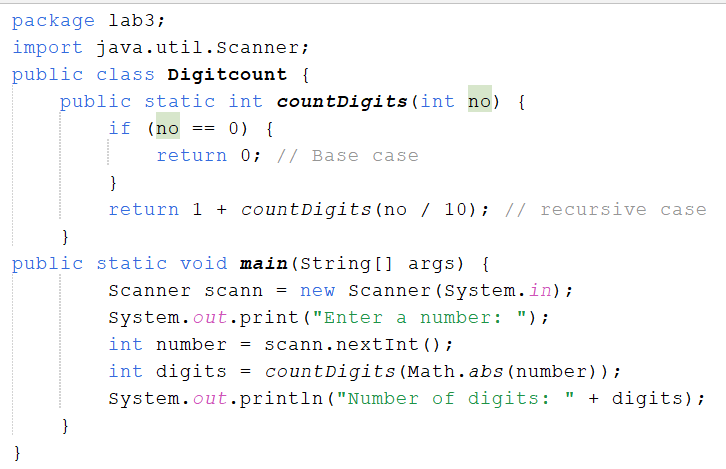


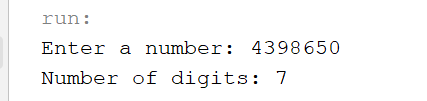
**HOME TASKS:**

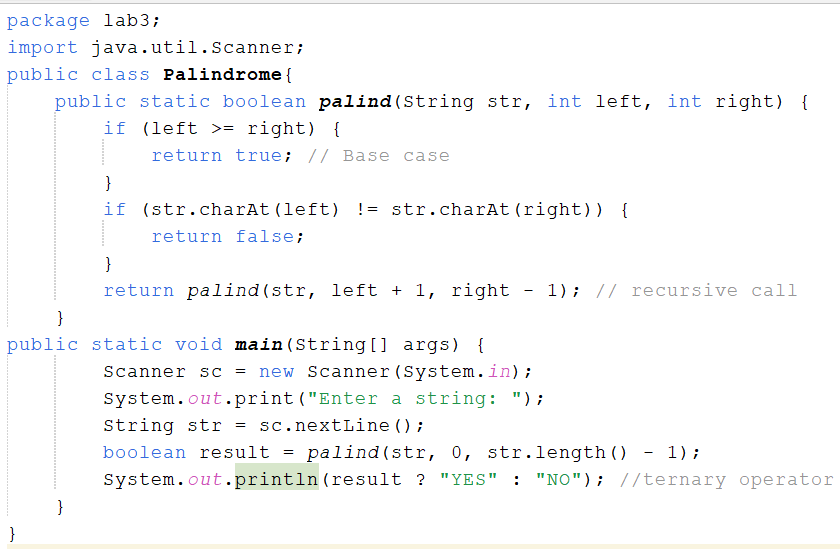
1. Write a java program to find the N-th term in the Fibonacci series using Memoization.

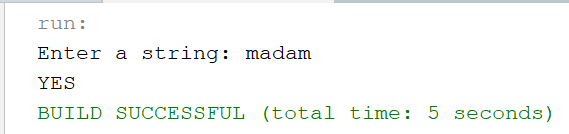




2. Write a program to count the digits of a given number using recursion.



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".



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

