**LAB # 03**

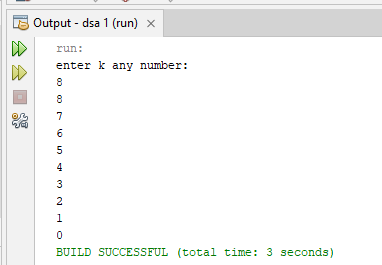
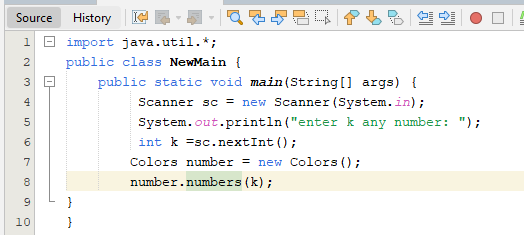
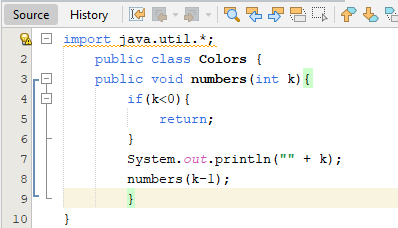
**RECURSION**

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

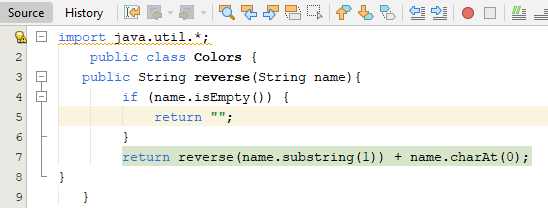
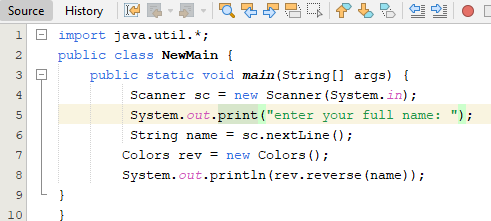
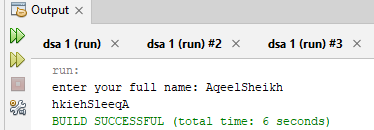
**LAB TASK**

1. Write a program which takes an integer value (k) as input and prints the sequence of

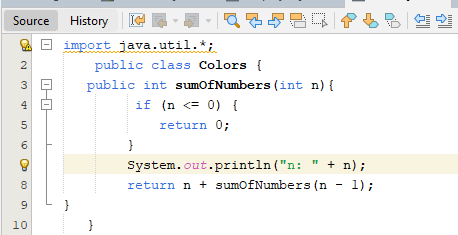
numbers from k to 0 in descending order.

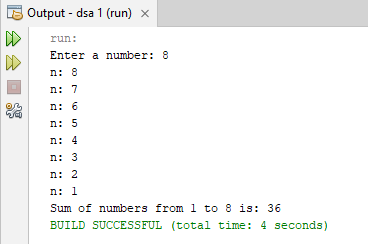
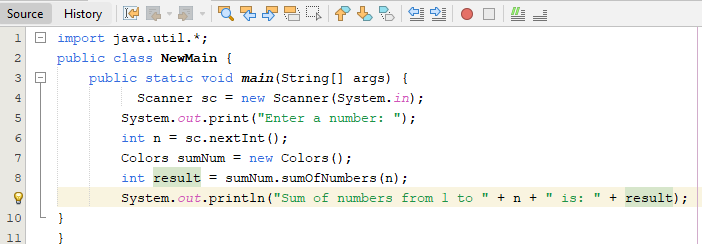


2. Write a program to reverse your full name using Recursion.

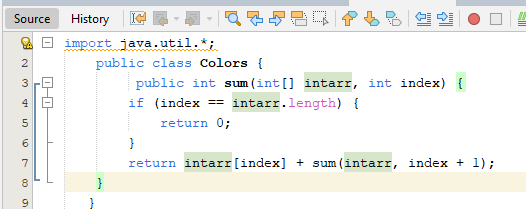
  

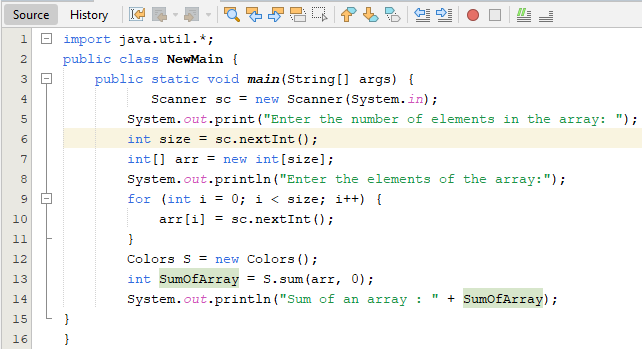
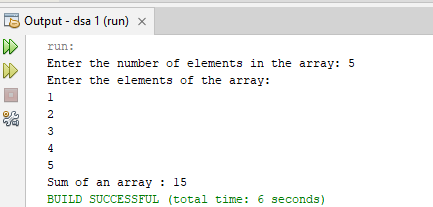
3. Write a program to calculate the sum of numbers from 1 to N using recursion. N should be user input.



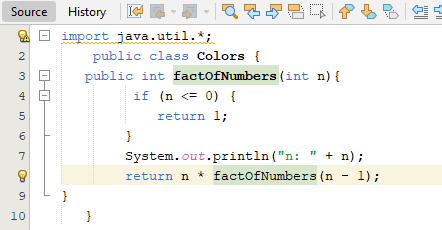


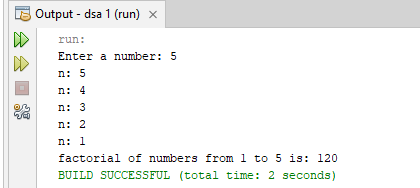
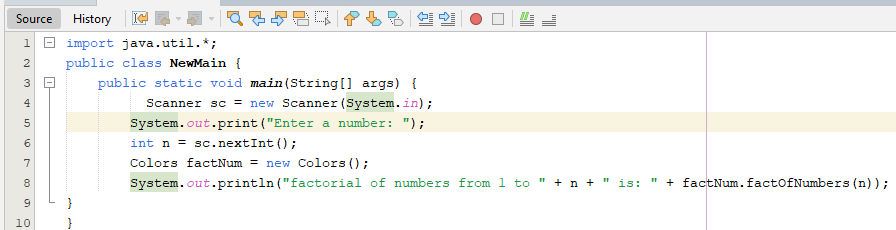
4. Write a recursive program to calculate the sum of elements in an array.



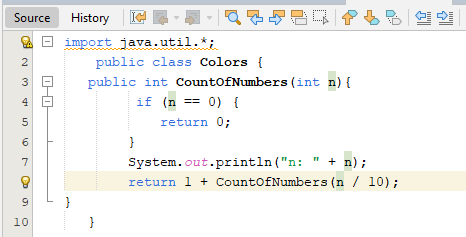
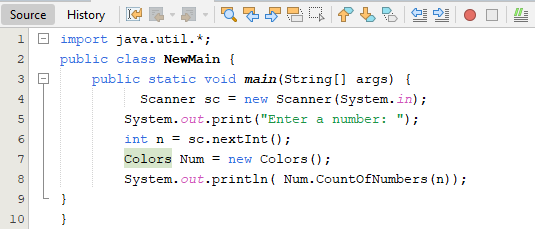
 

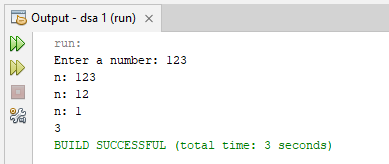
5. Write a recursive program to calculate the factorial of a given integer n.





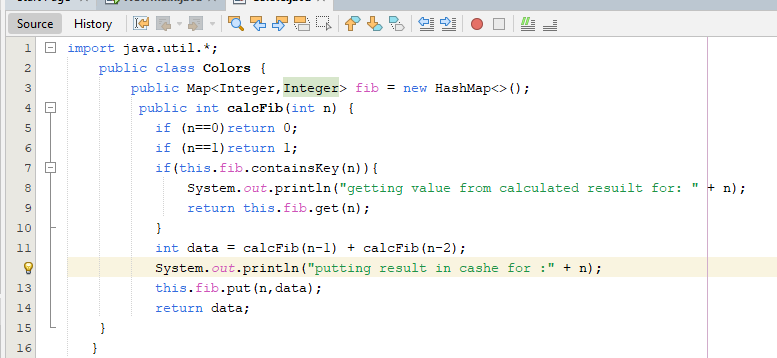
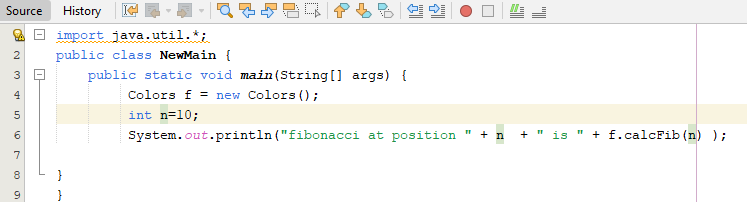
6. Write a program to count the digits of a given number using recursion.

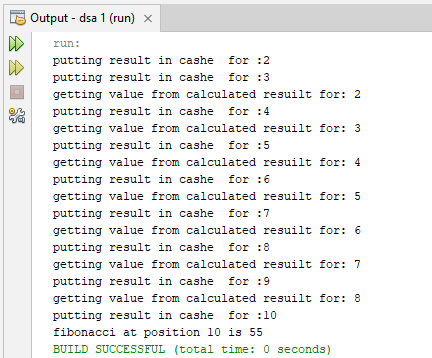
 



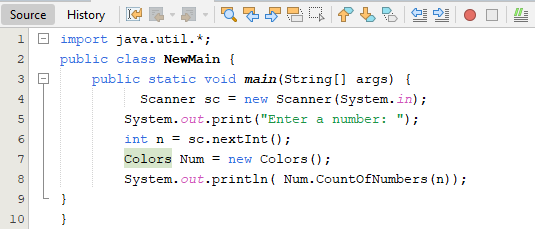
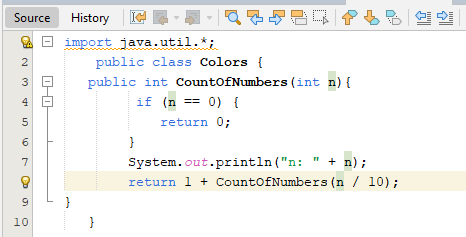
**HOME TASK**

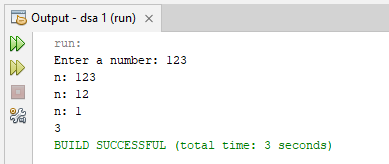
1. Write a java program to find the N-th term in the Fibonacci series using Memoization.



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

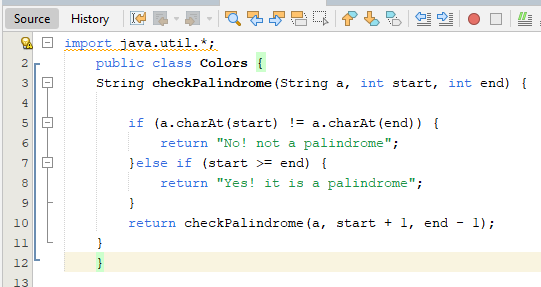


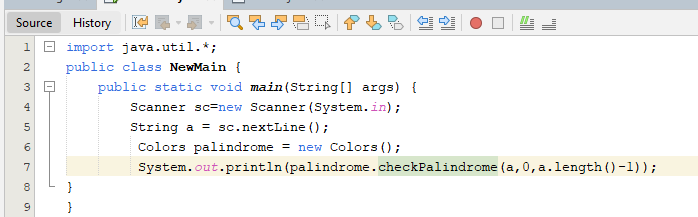


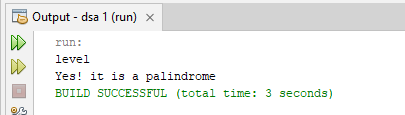
3. Write a java program to check whether a given string is a palindrome or not. A

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.

