

Laboratory Exercise 3

RECURSION

1. Implement *one* of the recursive algorithms that were discussed in the lectures last week, namely

- (a) Computes the factorial of a non-negative integer.
- (b) Writes a character string backward.
- (c) Computes the n th term in a Fibonacci sequence.

Note: the Java code for the methods are available from the lecture notes. However, you will need to construct a class including a main method to check whether these methods work.

2. Using comment `/*Recursive Call Here*/`, mark each recursive call in your program (class).
3. Modify your program (class) above so it will report, e.g. display, `Recursive Call(s)!` each time when a recursive method is called.
4. Using iterative approach, write a non-recursive method for the same problem chosen above.
5. (Optional - for Advanced Students) Compare the number of execution steps in the recursive and in the iterative method.