

Lab 9: Tail Recursion

COSC 3020: Algorithms and Data Structures

Lars Kotthoff
larsko@uwyo.edu

20 November 2019

Instructions

Attempt to finish the tasks below during the lab time. You have until Friday, 22 November 2019, 23:59h to submit the solutions to WyoCourses. You may ask your TA for feedback before submitting, but this feedback will be qualitative only.

You may *not* use external libraries in your code unless explicitly stated.

1 Tail Recursion

In the lectures, we've seen code for a recursive implementation for computing the Fibonacci numbers. Make this implementation tail-recursive.

Hint: It may help to have a look at the iterative dynamic programming implementation. What changes between iterations of the loop?

Total 8 points.

2 Analysis

Is the asymptotic complexity of tail-recursive Fibonacci different from the non-tail-recursive version? Why, or why not?

Total 2 points.