NTNU
Norwegian University of
Science and Technology

Department of Computer Science – IDI

TDT4205
Compiler Design

Assignment 3

Please submit solutions on Blackboard by Monday, 9.03.2020 23:59h

3.1 Practical Assignment: Simplifying the syntax tree

The provided skeleton for this exercise is now extended with a function simplify_tree in tree.c available in the src folder and this function is called from main.c after the initial syntax tree is constructed. Implement the function so that it traverses the tree and modifies it according to the instructions below.

3.1.1 Eliminate nodes of purely syntactic value

Delete the nodes with only one child and no meaningful data and associate the child and link the child with the parent.

3.1.2 Flattenining the list structure

Delete the internal nodes of the list structure and leave only the parent node with a list type and all list items as children. Print list items can be directly associated with the print statement.

3.1.3 Resolve Constant Expressions

Compute the value of the subtrees representing arithmetic operations with constants and replace them with the value.