https://folk.ntnu.no/michaeng/tdt4205_21/
michael.engel@ntnu.no

Practical exercises
Spring 2021

Practical Exercises 4

Syntax tree simplification

Please submit solutions on Blackboard by Friday, 19.03.2021 14:00h

Notice: Please submit solutions on Blackboard in groups of two or three students.
The practical exercises will be graded and count as part of your final grade.

The provided skeleton for this exercise is now extended with a function `simplify_tree` in `tree.c` (available in the `src` folder). 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.

4.1 Eliminate nodes of purely syntactic value (3 p.)

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

4.2 Flattenining the list structure (4 p.)

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.

4.3 Resolve Constant Expressions (3 p.)

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