— Exercise 3 —

Deadline: October 30th

Task 1 - Algorithm

Develop an *algorithm* for a theory module for equality logic and uninterpreted functions in your group. Write down your algorithm in pseudocode.

Identify the following operations in your algorithm:

- those that might be executed very often
- those that are or might be algorithmically difficult
- those that require non-trivial data structures

Boolean Variables

Take Boolean variables into account in your algorithm. There might occur several different Boolean variables in your input but they can only have two different values. This means that Boolean variables cannot be in more than two different equivalence classes. Also, Boolean function values of uninterpreted functions can only be in at most two different equivalence classes.

Task 2 - Data Structures

Deliberate, based on your algorithm and the previous analysis, which data structures are needed or would be suitable to enable, facilitate or speed up parts of your algorithm.

Specify a set of data structures as well as the interface that these data structures should fulfil.

Task 3 - Presentation

Prepare slides to present your algorithm and data structures in a short presentation (10-15 minutes) at the next meeting.