

Development of a Theorem Prover for Proof Schemata Final Report

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The main part of the presentation consists of defining basic notions of formula and clause schemata and to define corresponding calculi. Then we present a proof-search algorithm, which constructs a proof schema for a given formula schema. The validity problem is not even semi-decidable, therefore the algorithm cannot be complete.

The next goal is to present a graphical interface, called ProofTool, which is used to visualize and manipulate proofs. The proof-search algorithm is implemented and integrated in ProofTool. To represent proof derivations, besides well-known proof tree representation, we added new interface that represents proofs as circles. This interface is much easier for understanding proof structure.

Finally, we demonstrate the program and run some examples.