Verifying a Tableau Prover for Multi-Level-Syllogistics

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Abstract

TODO

1 Introduction

TODO

1.1 Related work

TODO

1.2 Contributions

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1.3 Notation

Isabelle/HOL [1] conforms to everyday mathematical notation for the most part. For the benefit of the reader that is unfamiliar with Isabelle/HOL, we establish notation and in particular some essential datatypes together with their primitive operations that are specific to Isabelle/HOL. We write t :: 'a to specify that the term t has the type 'a and 'a $\Rightarrow$ 'b for the type of a total function from 'a to 'b. The types for booleans, natural numbers, and in integers are bool, nat, and int, respectively. Sets with elements of type 'a have the type 'a set. Analogously, we use 'a list to describe lists, which are constructed as the empty list [] or with the infix constructor #, and are appended with the infix operator @. The function set converts a list into a set. For optional values, Isabelle/HOL offers the type option where a term opt :: 'a option is either None or Some a with a :: 'a. Finally, we remark that **iff** is equivalent to = on type bool and $\equiv$ is definitional equality of the meta-logic of Isabelle/HOL, which is called Isabelle/Pure.

2 A Semantics for Sets

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3 Conclusion

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References

[1] Tobias Nipkow, Lawrence Paulson, and Markus Wenzel. 2002. *Isabelle/HOL — A Proof Assistant for Higher-Order Logic*. LNCS, Vol. 2283. Springer.