

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

TODO

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 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 `≡` is definitional equality of the meta-logic of Isabelle/HOL, which is called Isabelle/Pure.

2 A Semantics for Sets

TODO

3 Conclusion

TODO

References

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

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