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A tactic language for declarative proofs. (English) [Zbl 1291.68320](#)

Kaufmann, Matt (ed.) et al., Interactive theorem proving. First international conference, ITP 2010, Edinburgh, UK, July 11–14, 2010. Proceedings. Berlin: Springer (ISBN 978-3-642-14051-8/pbk). Lecture Notes in Computer Science 6172, 99-114 (2010).

Summary: Influenced by the success of the Mizar system many declarative proof languages have been developed in the theorem prover community, as declarative proofs are more readable, easier to modify and to maintain than their procedural counterparts. However, despite their advantages, many users still prefer the procedural style of proof, because procedural proofs are faster to write. In this paper we show how to define a declarative tactic language on top of a declarative proof language. The language comes along with a rich facility to declaratively specify conditions on proof states in the form of sequent patterns, as well as ellipses (dot notation) to provide a limited form of iteration. As declarative tactics are specified using the declarative proof language, they offer the same advantages as declarative proof languages. At the same time, they also produce declarative justifications in the form of a declarative proof script and can thus be seen as an attempt to reduce the gap between procedural and declarative proofs.

For the entire collection see [\[Zbl 1195.68009\]](#).

MSC:

68T15 Theorem proving (deduction, resolution, etc.) (MSC2010)

Software:

[Stratego](#); [Mizar](#); [IsaPlanner](#); [Isar](#); [SAD](#)

Full Text: [DOI](#)