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**Mechanizing the metatheory of mini-XQuery.** (English) [Zbl 1350.68054](#)

Jouannaud, Jean-Pierre (ed.) et al., Certified programs and proofs. First international conference, CPP 2011, Kenting, Taiwan, December 7–9, 2011. Proceedings. Berlin: Springer (ISBN 978-3-642-25378-2/pbk). Lecture Notes in Computer Science 7086, 280-295 (2011).

Summary: We present a Nominal Isabelle formalization of an expressive core fragment of XQuery, a W3C standard functional language for querying XML documents. Our formalization focuses on results presented in the literature concerning XQuery's operational semantics, typechecking, and optimizations. Our core language, called mini-XQuery, omits many complications of XQuery such as ancestor and sibling axes, recursive types and functions, node identity, and unordered processing modes, but does handle distinctive features of XQuery including monadic comprehensions, downward XPath steps and regular expression types. To our knowledge no language with similar features has been mechanically formalized previously. Our formalization is a first step towards a complete formalization of full XQuery.

For the entire collection see [\[Zbl 1226.68005\]](#).

**MSC:**

- [68N15](#) Theory of programming languages
- [68N18](#) Functional programming and lambda calculus
- [68T15](#) Theorem proving (deduction, resolution, etc.) (MSC2010)

Cited in 1 Document

**Software:**

[Isabelle](#); [PoplMark](#); [CRSX](#); [Abella](#); [Nominal Isabelle](#); [XQuery](#); [Isabelle/HOL](#); [Twelf](#)

**Full Text:** [DOI](#)

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