Isabelle

UNIVERSITY OF CAMBRIDGE
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TECHNISCHE UNIVERSITÄT MÜNCHEN

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What is Isabelle?

Isabelle is a generic proof assistant. It allows mathematical formulas to be expressed in a formal language and provides tools for proving those formulas in a logical calculus. Isabelle is developed at University of Cambridge (Larry Paulson), Technische Universität München (Tobias Nipkow) and Université Paris-Sud (Makarius Wenzel). See the Isabelle overview for a brief introduction.

Now available: Isabelle2014

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Some highlights:

- Improved Isabelle/jEdit Prover IDE: navigation, completion, spell-checking, Query panel, Simplifier Trace panel.
- Support for auxiliary files within the Prover IDE, notably Isabelle/ML.
- Support for official Standard ML within the Prover IDE, independently of Isabelle theory and proof development.
- HOL: BNF datatypes and codatatypes within theory Main, with numerous add-on tools.
- HOL tool enhancements: Nitpick, Sledgehammer.
- HOL: internal SAT solver "cdclite" with models and proof traces.
- HOL: updated SMT module, with support for SMT-LIB 2 and recent versions of Z3, as well as CVC3, CVC4.
- HOL: numerous library enhancements: main HOL, HOL-Word, HOL-Multivariate_Analysis, HOL-Probability.
- System integration: improved support of LaTeX on Windows platform.
- Updated and extended manuals: codegen, datatypes, implementation, isar-ref, jedit, system.

See also the cumulative NEWS.