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Collana	Lecture Notes in Artificial Intelligence ; ; 4180
Disciplina	006.3
Soggetti	Artificial intelligence Computer software Computers Information storage and retrieval Mathematical logic Computer science—Mathematics Artificial Intelligence Mathematical Software Theory of Computation Information Storage and Retrieval Mathematical Logic and Formal Languages Symbolic and Algebraic Manipulation
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Setting the Stage for Open Mathematical Documents -- Setting the Stage for Open Mathematical Documents -- Document Markup for the Web -- Markup for Mathematical Knowledge -- OMDoc: Open Mathematical Documents -- An OMDoc Primer -- An OMDoc Primer -- Mathematical Textbooks and Articles -- OpenMath Content Dictionaries -- Structured and Parametrized Theories -- A Development Graph for Elementary Algebra -- Courseware and the Narrative/Content Distinction -- Communication with and Between Mathematical Software Systems -- The OMDoc Document Format --

The OMDoc Document Format -- OMDoc as a Modular Format -- Document Infrastructure (Module DOC) -- Metadata (Modules DC and CC) -- Mathematical Objects (Module MOBJ) -- Mathematical Text (Modules MTXT and RT) -- Mathematical Statements (Module ST) -- Abstract Data Types (Module ADT) -- Representing Proofs (Module PF) -- Complex Theories (Modules CTH and DG) -- Notation and Presentation (Module PRES) -- Auxiliary Elements (Module EXT) -- Exercises (Module QUIZ) -- Document Models for OMDoc -- OMDoc Applications, Tools, and Projects -- OMDoc Applications, Tools, and Projects -- OMDoc Resources -- Validating OMDoc Documents -- Transforming OMDoc by XSLT Style Sheets -- OMDoc Applications and Projects -- Changes to the Specification -- Quick-Reference Table to the OMDoc Elements -- Quick-Reference Table to the OMDoc Attributes -- The RelaxNG Schema for OMDoc -- The RelaxNG Schemata for Mathematical Objects.

Sommario/riassunto

Computers are changing the way we think. Of course, nearly all desk-workers have access to computers and use them to email their colleagues, search the Web for information and prepare documents. But I'm not referring to that. I mean that people have begun to think about what they do in computational terms and to exploit the power of computers to do things that would previously have been unimaginable. This observation is especially true of mathematicians. Arithmetic computation is one of the roots of mathematics. Since Euclid's algorithm for finding greatest common divisors, many seminal mathematical contributions have consisted of new procedures. But powerful computer graphics have now enabled mathematicians to envisage the behaviour of these procedures and, thereby, gain new insights, make new conjectures and explore new avenues of research. Think of the explosive interest in fractals, for instance. This has been driven primarily by our new-found ability rapidly to visualize fractal shapes, such as the Mandelbrot set. Taking advantage of these new opportunities has required the learning of new skills, such as using computer algebra and graphics packages.
