mizar-items: Exploring fine-grained dependencies in the Mizar Mathematical Library

Jesse Alama

(Submitted on 24 Jul 2011 (v1), last revised 19 Sep 2011 (this version, v2))

The Mizar Mathematical Library (MML) is a rich database of formalized mathematical proofs (see this http URL). Owing to its large size (it contains more than 1100 "articles" summing to nearly 2.5 million lines of text, expressing more than 50000 theorems and 10000 definitions using more than 7000 symbols), the nature of its contents (the MML is slanted toward pure mathematics), and its classical foundations (first-order logic, set theory, natural deduction), the MML is an especially attractive target for research on foundations of mathematics. We have implemented a system, mizar-items, on which a variety of such foundational experiements can be based. The heart of mizar-items is a method for decomposing the contents of the MML into fine-grained "items" (e.g., theorem, definition, notation, etc.) and computing dependency relations among these items. mizar-items also comes equipped with a website for exploring these dependencies and interacting with them.

Comments:	Accepted at CICM 2011: Conferences in Intelligent Computer Mathematics, Track C: Systems and Projects
Subjects:	**Digital Libraries (cs.DL)**; Logic (math.LO)
MSC classes:	03B35
ACM classes:	H.3.3
Journal reference:	Intelligent Computer Mathematics, Lecture Notes in Computer Science 6824, pp. 276-7, 2011
DOI:	10.1007/978-3-642-22673-1_19
Cite as:	**arXiv:1107.4721 [cs.DL]**
	(or **arXiv:1107.4721v2 [cs.DL]** for this version)

Submission history

From: Jesse Alama [view email]
[v1] Sun, 24 Jul 2011 04:25:44 GMT (3kb)
[v2] Mon, 19 Sep 2011 15:50:13 GMT (3kb)

Which authors of this paper are endorsers?