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XML上的函数依赖推理

谈子敬, 庞引明, 施伯乐

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谈子敬, 庞引明, 施伯乐 (复旦大学 计算机与信息技术系, 上海 200433)

第一作者: 谈子敬(1975—), 男, 上海人, 博士生, 主要研究领域为数据库理论, XML.

联系人: 谈子敬 Telephone: 86-21-55059446, Fax: 86-21-65642219, E-mail: zijingtansina@sina.com

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Abstract

XML is extended with functional dependencies, which are fundamental to semantic specification. Based on DTD, tree model for XML and path expressions, definitions for node value equality and node set are given. The definition for functional dependency, logical implication and path closure are studied; the satisfiability of functional dependency in a given DTD is proved. A sound and complete set of inference rules is presented, and an algorithm to calculate closure for XML paths is proved.

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摘要

函数依赖是数据语义的重要组成部分,这一概念被引入到XML的领域中.基于DTD,XML的树模型和路径表达式,对节点的值相等和路径节点集作了定义.在此基础上,研究了XML中函数依赖、逻辑蕴涵和路径闭包的概念,证明了函数依赖在给定DTD上的可满足性.提出了一个XML上函数依赖的正确和完备的推理规则集,并给出了一个用于计算路径闭包的算法.

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