

Inferring functional dependencies for XML storage

ABSTRACT

XML allows redundancy of data with its hierarchical structure where its elements may be nested and repeated. This will make the same information appear in more than one place; in fact it allows the same elements appear at different sub-trees. With this capability, XML is easier to understand and to parse, while to recover this information would require less joins. This is in contrast to relational data for which the normalized theory has been developed for eliminating data redundancy. Therefore how to detect redundancy in XML data is important before mapping can be done. In this paper, we use functional dependencies to detect data redundancies in XML documents. Based on inferring other functional dependencies from the given ones, we proposed an algorithm for mapping XML DTDs to relational schemas. The result is a "good relational schema" in terms of reducing data redundancy and preserving the semantic constraints.

Keyword: XML mapping; XML functional dependencies