

ABSTRACT

The increasing growth of XML as the undisputable *lingua franca* standard for data interchange and content management has changed the prospect of how to store XML data effectively into relational databases. Most organisations still rely heavily on existing relational database management systems (RDBMS) to store and manage daily business transactions. However, due to the underlying intrinsic difference principles between XML structures and relational databases structures, there is a growing need for tools that can perform data mappings and transfer of XML data to relational databases. While most existing XML middleware provide highly valuable XML functionalities, they still remain as static pieces of APIs or classes, which are programmatic-oriented approach that requires some programming skills. This research is designed to provide a generic yet extensive and graphical user-friendly XML-based middleware interface framework, which is known as JXDB, that allows a user to use XML for dealing with semi-structured data for creating, accessing, updating and transferring of XML data to multiple relational databases that store structured data and vice versa. Additionally, it aims to incorporate XQuery language to manipulate XML data from multiple XML sources. JXDB prototype can serve as a basis for future work to extend its functionalities, such as to provide the ability to integrate XML with other types of databases besides relational databases and web-enabled core services as web services so that users can access JXDB across the Internet. Hence, it will assist XML to fulfill its potential and gain wide acceptance in data interchange and integration with heterogeneous relational databases.