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38. XML Based Mediated Query Re-writing Framework (XMQR)

Abstract

The recent advancement in informational systems' architectures increases the demand of forming a unified view of enterprise information, since as they are spread over various heterogeneous data sources such as relational databases, mainframes, different operating systems, hierarchical repositories, and webs based data sources. To integrate the information from heterogeneous data sources and give it a unified representation to the users is known as Information Integration. There are many application architectures that are designed for Enterprise Information Integration for solving the problems of semantic heterogeneity (the modeling problem) and query optimization (the querying problem) in Integration Architecture. Architectures such as Mediator-based in which information is coming from disseminate sources, Agent-based Architectures that have various software agents specialized in specific tasks work together to provide various integration services. Federated Architectures in which data is integrated through message-oriented middle wares. Enterprise Information Integration depends on sophisticated technologies and complex architectures. Now the availability of data in XML format, there is no need of complex wrappers that convert web-based information to human readable format and to machine-readable format. However, Query Optimization/Management is the major area of research in XML based integration systems. Since XQuery precludes the features of traditional SQL or OQL as it deals with the structured and semi-structured data sources. XQuery is order sensitive and the optimizing and generating the query plans is different and complex task as in other relational query language based integration systems. This dissertation explains the query processing in XML-based data integration system in hybrid Peer-to-Peer based environment. Secondly, present 'XML based Mediated Query Re-writing (XMQR)' Framework for efficient query processing in hybrid Peer-to-Peer data management model.