Abstract

Due to the diversity of data source data integration has become a challenging task. Data warehouse system plays a vital role to integrate the data for making important business decisions. Data within the data warehouse is arranged as multidimensional schema. In past many works exist to carry out the design of the multidimensional schema for data warehouse from either requirements and/or data sources. These approaches are either manual or automated which work with only relational sources. But as today the data warehouse system needs to deal with semi-structured and unstructured sources, the design task becomes much tedious. Recently, ontology has been very useful for different data integration projects. The use of ontology could solve the syntactic and semantic conflicts that arise from heterogeneous sources. It also provides a way for automating the design of multidimensional schema and populating the data warehouse in a more meaningful way. This paper proposes a framework using ontology for the design of multidimensional schema. Our framework uses a hybrid approach where the reconciliation of requirements and data source are done at the early stage of design. We adopt ontology reasoning in order to automatically derive multidimensional elements such as facts and dimensions.
An Ontology based Hybrid Approach to Derive Multidimensional Schema for Data Warehouse

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Index Terms

Computer Science Decision Support
Keywords

Data Modelling  Multidimensional Schema  Data warehouse  Ontology