Catalog-based Conversion from Relational Database into XML Scheme (XSD)

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Where we are in the age of information revolution, exchange information, and transport data effectively among various sectors of government, commercial, service and industrial, etc., the uses of a new databases model to support this trend has become very important because inability of traditional databases models to support it. eXtensible Markup Language (XML) considers a new standard model for data interchange through internet and mobiles devices networks, it has become a common language to exchange and share the data of traditional models in easy and inexpensive ways. In this research, we propose a new technique to convert the relational database contents and schema into XML schema (XSD- XML Schema Definition), the main idea of the technique is extracting relational database catalog using Structured Query Language (SQL). We follow three steps to complete the conversion process. First, extracting relation instance (actual content) and schema catalog using SQL query language, which consider the required information to implement XML document and its schema. Second, transform the actual content into XML document tree. The idea of this step is converting table columns of the relations (tables) into the elements of XML document. Third, transform schema catalog into XML schema for describing the structure of the XML document. To do so, we transform datatype of the elements and the variant data constrains such as data length, not null, check and default, moreover define primary foreign keys and the referential integrity between the tables. Overall results of the technique are very promise while the technique is very clear and does not require complex procedures that could adversely effect on the results accuracy. We performed many experiments and report their elapsed CPU times.

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