Temporal slicing in the Evaluation of XML Data

By

Dengfeng Gao

Department of Computer Science
University of Arizona

ABSTRACT

XML is now the emerging standard for data representation and exchange on the web. Querying XML data has garnered increasing attention from database researchers. As with relational data, XML data changes over time with the creation, modification, and deletion of XML documents. Expressing queries on time-varying (relational or XML) data is more difficult than writing queries on non-temporal data. In this talk, I will present a temporal XML query language, tauXQuery, in which we add valid time support to XQuery by minimally extending the syntax and semantics of XQuery. We adopt a stratum approach which maps a tauXQuery query to a conventional XQuery. I will focus on how to perform this mapping, in particular, on mapping sequenced queries, which are by far the most challenging. The critical issue of supporting sequenced queries (in any query language) is time-slicing the input data while retaining period timestamping. We propose several techniques to perform this time-slicing and evaluate their performance on a variety of temporal queries.