View-based Query Processing for Semistructured Data

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Abstract

When it comes to dealing with real world examples, abstract 'information manipulation systems' need to be enhanced with concrete theories. This is the case for logical calculi, where for example theory resolution has been introduced, or for Description Logics which are augmented with concrete domains. A similar problem comes up in query languages, in particular in XML-query languages. If for example a cinema databases lists all movies with the start time and duration, I can't query it 'give me all movies ending before midnight', without a special mechanism that can deal with temporal notions.

In the talk I shall present the 'WebCal System'. It is developed as a special calculation and reasoning component to be integrated into a query language or as a theory in more abstract calculi. The system can deal with 'geotemporal' notions, i.e. temporal notions from every day life ('geotemporal' distinguishes it from temporal logics in the pure logical sense). The system can work in particular with different calendar systems with all their pecularities; it can represent and manipulate fuzzy notions like 'late night'; one can specify application specific temporal notions like 'the Bavarian school holidays', or 'my weekend'; it provides a lot of operations on crisp and fuzzy time intervals and relations between crisp and fuzzy time intervals.

I shall explain the system and demonstrate a prototype. The integration into application systems, in particular XML-query languages, is ongoing work and not part of this talk.