Masters Final Oral Defense

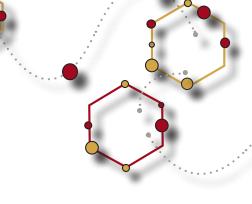**Wednesday, April 11, 2018**
216 Atanasoff Hall at 3:30 PM
Ying Wei

Major Professor:
Shashi Gadia

The benchmarking XQuery and OOXQuery for ease of use and performance

XML – the extensible markup language – is a versatile platform for representation of information. Using the type mechanisms available within XML, we have proposed OOXML, an object-oriented dialect for XML. XML elements can be realized as objects by enhancing them to support object-identities, object hierarchy, and references. As OOXML documents are legal XML documents, they are amenable for use in XML processing technologies such as XQuery, XSLT, DOM/API, etc. In addition to the usual syntax the users can benefit from dotted expressions of object-oriented systems to access properties of super and referenced objects, we have implemented a preprocessor for OOXQuery – a dialect of XQuery – that translates an OOXQuery query into XQuery query. Although the translated query is cryptic for users, it can be processed in an XQuery engine. In this paper we consider benchmarking XQuery and OOXQuery for ease of use and runtime performance. Due to dotted expressions, OOXQuery is generally more natural than XQuery. For many types of queries, the performance of OOXQuery seems better. Therefore, we find that OOXQuery is an interesting alternative to XQuery.

The object hierarchy is available in two flavors: hierarchy by reference and hierarchy by value for which we informally use suffixes "-R" and "-V", respectively, when necessary. Within the two options for hierarchy, OOXQuery-R seems more natural than OOXQuery-V and the performance results are mixed.

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