

Parallel Querying of Distributed Ontologies with Shared Vocabulary

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Abstract : Ontologies and various semantic repositories became a convenient approach for implementing model-driven architectures of distributed systems on the Web. SPARQL is the standard query language for querying such. However, although SPARQL is well-established standard for querying semantic repositories in RDF and OWL format and there are commonly used APIs which supports it, like Jena for Java, its parallel option is not incorporated in them. This article presents a complete framework consisting of an object algebra for parallel RDF and an index-based implementation of the parallel query engine capable of dealing with the distributed RDF ontologies which share common vocabulary. It has been implemented in Java, and for validation of the algorithms has been applied to the problem of organizing virtual exhibitions on the Web.

Keywords : distributed ontologies, parallel querying, semantic indexing, shared vocabulary, SPARQL

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