Modifying queries strategy for Graph-Based Speculative Query Execution for RDBMS

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The paper relates to parallel speculative method that supports query execution in relational database systems. The speculative algorithm is based on a dynamic analysis of input query stream in databases serviced in SQLite. A middleware called the Speculative Layer is introduced, which, based on a specific graph representation of query streams, chooses the Speculative Queries to be executed. The paper briefly presents the structure of the Speculative Layer and graph modeling method. Then an extended version of speculative algorithm is presented which assumes an increased number of modifying queries in input query stream. Each modifying query in the analysed query stream endangers already executed Speculative Queries with possibly invalid data and blocks their further use. We propose more sophisticated modifying queries analysis which aims in reducing the number of Speculative Queries which have to be deleted. Experimental results are presented based on the proposed algorithms assessment, using a real testbed database serviced in SQLite.

Keywords: speculative query execution, RDBMS, modifying queries.