Framework for testing SQL in a state-of-the-art object-relational DBMS

Background

Any software development includes testing. Regression tests of SQL functionality are important part of developing any relational DBMS. SQL functionality is tested by issuing SQL queries and comparing result relations with expected ones. Calling a SQL query and comparing the result require taking into account many options, thus adding new tests requires significant amount of developer work. It is necessary to automate the testing process by developing a framework with a goal to reduce developer's effort on maintaining and updating the regression tests.

The targeted DBMS is Starcounter, which provides the fastest high performance database for real-time transactional applications. Its In-memory, ACID-compliant technology reduces hardware costs by orders of magnitude. Starcounter is integrated with .NET.

Purpose and Scope

The purpose of this project is to develop a prototype of a test framework for a modern object-relational DBMS, Starcounter.

The following tasks are included in the project:

- Research the state-of-the-art in DBMS testing
- Analyze requirements for the test framework
- Design the test framework for Starcounter
- Implement the proposed design in a prototype

The project is intended for one or two students.

Experience and Knowledge requirements

- Deep program development experience
- Knowledge of software testing
- Knowledge of databases
- Experience from using SQL
- Experience in .NET

Presentation of results

The project should result in a working prototype and a report including the prerequisites, assumptions, individual performance result and conclusions.

Contacts for application and questions:

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