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Prof. Dr. Michael Böhlen
Database Technology

Vertiefungsarbeit

Luis Schüller

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Prepare scheduling relations for multi-version scheduling protocols

In the proposed project, an existing demo application for the *Oshiya* scheduling model shall be prepared for running multi-version scheduling protocols such as SI and DSSI [1]. The *Oshiya* scheduling relations are protocol-dependent and vary depending on running single- or multi-version scheduling protocols. These differences shall be elaborated and illustrated by representative examples. The creation of the scheduling relations (for single- and multi-version protocols) has to be realized, supported by an appropriate graphical user interface. The graphical user interface shall be designed and implemented in a way that it emphasizes the characteristics and advantages of *Oshiya*.

Tasks:

- Literature research on declarative scheduling [1, 2, 3]
- Elaborate the difference between scheduling relations for single- and multi-version scheduling protocols
- Implement the creation of scheduling relations (for single- and multi-version protocols), supported by an appropriate graphical user interface.
- Presentation of results (15 minutes)
- Oral exam

Requirements:

- Experience in programming Java (incl. thread programming), Java Swing
- Knowledge in concurrency control, transaction processing

Aim:

- A running GUI for the *Oshiya* demo application allowing users to specify and create scheduling relations for single- and multi-version scheduling protocols.



Literatur

- [1] Christian Tilgner and Boris Glavic and Michael H. Böhlen and Carl-Christian Kanne. Declarative Serializable Snapshot Isolation. In *ADBIS*, pages 170–184, September 2011.
- [2] Christian Tilgner and Boris Glavic and Michael H. Böhlen and Carl-Christian Kanne. Smile: Enabling Easy and Fast Development of Domain-Specific Scheduling Protocols. In *BNCOD*, pages 128–131, 2011.
- [3] C. Tilgner. Declarative Scheduling in Highly Scalable Systems. In *Proceedings of the 2010 EDBT/ICDT Workshops*, EDBT '10, pages 41:1–41:6, 2010.

Task assignment and Supervisor: Christian Tilgner

Starting date: 09.11.2011

Ending date: 24.01.12

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Vereinbarer Prüfungsstoff:

- Mehrbenutzerkontrollen in Datenbanksystemen
- Funktionsweisen vom Zwei-Phase-Sperreprotokoll und von Snapshot Isolation, deren Unterschiede und Vor- und Nachteile
- Unterschied von Single-Version-Protokollen und Multiversions-Protokollen bzgl. Oshiyama