Database Theory
VU 181.140, WS 2019

Report and Presentation

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Outline

1. General Information (Recapitulation)

2. Assignment of Articles

3. Important Dates (Provisional Plan)

Course Overview

Fundamental aspects of (relational) query languages

- Relational algebra vs. relational calculus vs. SQL
- Introduction to datalog
- Codd’s Theorem: relational algebra vs. First-Order logic
- Trakhtenbrot’s Theorem: some undecidability results
- Complexity of Query Evaluation
- (Acyclic) Conjunctive Queries
- Inexpressibility Results (Ehrenfeucht-Fraïssé Games)

Assessment

Components

1. Individual work on 1 article from database theory research
   - Details (e.g. assignment of articles) to be provided later
   - Short written report of this article (2–3 pages)
   - Oral presentation (ca. 20 min, depends on number of participants)
   - Sufficient to get mark 3 (or worse)

2. Oral exam
   - positive assessment of report & presentation required
   - exam not compulsory, but required for marks 1 and 2
Assessment of Report & Presentation

Criteria of a good report & presentation

- reasonable effort (30 - 40 hours)
- basic understanding of the article
- honestly identify parts which you did not understand (give a justification: which prerequisites were missing?)
- relate the article to the contents of the course
- quickly check important background articles
- (presentation) being able to answer questions (in particular, those relating the article to the course)

Assignment of Articles

3 overall topics

- Query Evaluation and Optimization
- XML and RDF Data
- Datalog

Selection / Assignment of Articles

please choose one article in class.

Important Dates (Provisional Plan)

Submission of the Report

- Submission by mail to pichler@dbai.tuwien.ac.at
- Deadline: 3 December, 2019

Presentation

- 2 - 3 classes: 9 + 10 (+ 16) December, 2019
- definitive plan will be announced by mail after the submission deadline (depends on exact number of students)
- presence at the presentations is compulsory (not just for the speaker, also for the audience)
- preferences concerning the date of the presentation: per mail together with the submission of the report (first come, first served)