Advanced Topics in Databases

Prof. Dr. Gunter Saake
Dr.-Ing. Eike Schallehn
Dr. Veit Köppen

OvG Universität Magdeburg
Fakultät für Informatik
Institut für Technische und Betriebliche Informationssysteme

2012
Motivation for the Lecture

- Familiarize students with current developments in database research
- Topics chosen:
  - First solutions currently make their way into database management systems and applications → practical relevance
  - Solutions not yet fully developed and open problems exist → research relevance
- Possible starting points for scientific work, e.g. master thesis, position in academia, Ph.D. thesis, etc.
Overview of possible Topics

1. Multimedia Retrieval in Databases (Saake)
   - how to efficiently access image, video, audio, and text data stored in a database

2. Database Tuning and Self-Tuning (Schallehn)
   - current developments regarding database performance optimization

3. Data Management for Embedded Devices and Sensor Networks (Köppen)
   - special solutions for data management on small scale devices and their interoperation in networks

4. Column-oriented DBMS (Schallehn)
   - special storage techniques suitable for certain applications like analytical processing

5. ...
Overview of possible Topics /1

1. Data Quality (Köppen)
   - what is data quality? how can it be achieved?

2. Cloud Storage (Saake / Schallehn)
   - how can data storage be offered as a service on the web?

3. ...
Organization

- **Lecture**
  - Every week Wednesday at 11:15 in room 05/211
  - Two to four weeks for each topic read by Prof. Saake, Dr. Eike Schallehn, and Dr. Veit Köppen
  - Lecture slides will be made available on lecture homepage
    http://wwwiti.cs.uni-magdeburg.de/iti_db/lehre/advdb

- **Exercise**
  - Theoretical exercises based on Exercise sheets available on the lecture homepage
  - Held by Andreas Lübcke
  - Every week Monday at 13:15 in room 05/209
  - Starting on April 16

- **Exam**
  - Oral exam of 20-30 minutes after end of lecture period
  - Credits (Schein): examination passed with grade \( \leq 4.0 \) or special assignment