Advanced Database Systems (ADBS)

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Teacher's information

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    - ▶ [Home] ≫ Teaching ≫ Advanced Database Systems
- ▶ **office hours:** Tuesday, 16:30-18:30 (or by appointment)
    - ▶ appointment is always preferable
    - ▶ also in office hours, contact me first
- ▶ more info (**cell**, **skype**, ...) on my webpage

Course structure

- Part 1: Advanced concepts in relational database systems
- Part 2: Data Warehousing/Non-relational systems/NoSQL data models

Overview of Part 1: Relational systems

- Query processing and optimization
  - Query processing
    - algorithms for evaluating operations (e.g., selection, join)
  - Cost-based optimization and heuristics
    - choice of "best" evaluation plan among "all" equivalent ones
- Distributed database architectures
  - An introduction to distributed DBMS
  - Distributed database design (fragmentation and allocation)
  - Distributed query processing and optimization
  - Transaction management in distributed databases
    - distributed concurrency control (two-phase locking – 2PL)
    - distributed DBMS reliability (two-phase commit – 2PC)
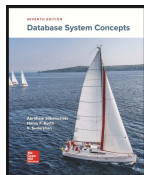
Material about Part 1: Relational systems

- **Database System Concepts**
  Silberschatz, Korth, Sudarshan

  7th Edition (or 6th Edition)
  McGraw-Hill, 2020
  `https://www.db-book.com/index.html`
     (extra contents: original slides, solutions, etc)

- **Principles of Distributed Database Systems**
  Özsu and Valduriez

  3rd Edition
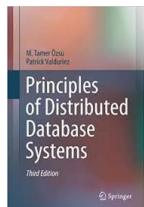 Springer, 2011
  ISBN: 978-1-4419-8833-1 (hard cover)
          978-1-4939-4174-2 (soft cover)
          978-1-4419-8834-8 (electronic)
  `https://extras.springer.com/?query=978-1-4419-8833-1`
     (original slides)

- other material (e.g., slides, other books) will be announced at due time
  and made available on my webpage