



# Introduction to Databases

## 《数据库引论》

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(Spring 2014)

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# Contacting the Instructor

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# Contacting the TAs

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- Ms. Xin Cui (崔鑫)
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- Tel: 55664967



# Goals of the Course

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- Foundation of Relational databases
- Major Techniques for building database management systems
- Basic skills for **designing databases** and **implementing database applications**

"Everything you should know so that you can get an industrial job working with relational databases"



# Textbook and References

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- Textbook

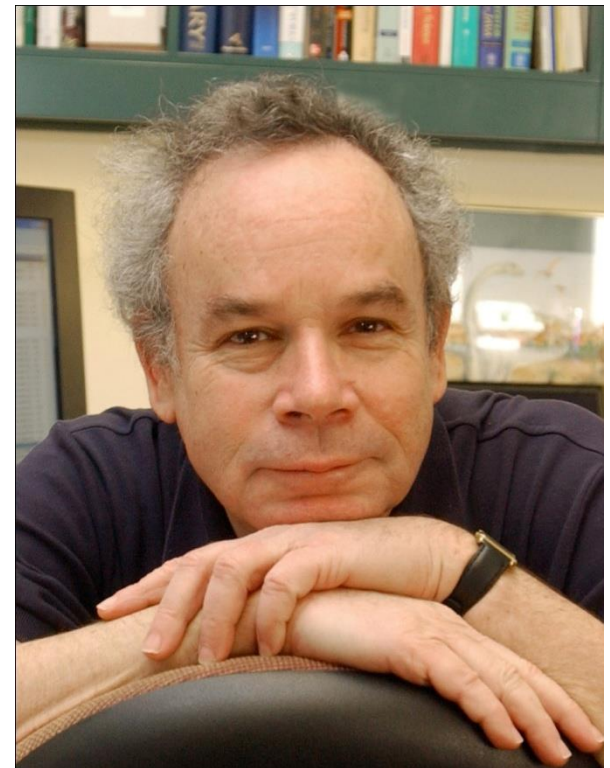
- Abraham Silberschatz, Henry F. Korth and S. Sudarshan, *Database System Concepts* (5<sup>th</sup> or 6<sup>th</sup> edition) , 2006/2012

- Other References

- Raghu Ramakrishnan and Johannes Gehrke, *Database Management Systems* (3rd Edition)
- C.J.Date, *An Introduction to Database Systems* (Seventh Edition)
- Jeffrey D. Ullman and Jennifer Widom, *A First Course in Database Systems* (Second Edition)
- Patrick O'Neil and Elizabeth O'Neil, *Database Principles, Programming, and Performance*, Morgan Kaufmann

# Further about the Textbook and the First Author

- Avi Silberschatz
  - Sidney J. Weinberg Professor of Computer Science; Fellow of ACM, IEEE, AAAS; 1997 ACM SIGMOD Contribution Award winner
  - Chair of the Computer Science Department at Yale University
  - Vice President of the Information Sciences Research Center at Bell Laboratories
  - Chair professor in the Department of Computer Sciences at the University of Texas at Austin
  - <http://codex.cs.yale.edu/avi/>
- Text book URL: <http://www.db-book.com/>





# Other Materials

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- Conferences Proceedings
  - PODS, SIGMOD, VLDB, ICDE, ICDT, EDBT, ER, DEXA, DASFAA, etc.
- Journals
  - ACM Transactions on Database Systems (TODS)
  - IEEE Transactions on Knowledge and Data Engineering (TKDE)
  - VLDB Journal ; PVLDB
  - Data and Knowledge Engineering
- The Internet resources
  - Yahoo, Google, Citeseer, DBLP, etc.



# Outline of the Course (1)

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- **Lecture 1:** Introduction to the course and database systems (**Feb. 26**)
- **Part I Relational databases: models & languages**
  - **Lecture 2:** Relational Data Model and Relational Algebra (**Mar. 5**)
  - **Lecture 3:** Structured Query Language (**Mar. 12**)
  - **Lecture 4:** Advanced SQL (**Mar. 19**)
  - **Lecture 5:** E-R model (**Mar. 26**)
- **Part II Relational database design**
  - **Lecture 6:** Relational Database Design (Part-I) (**Apr. 2**)
  - **Lecture 7:** Relational Database Design (Part-II) (**Apr. 9**)
  - **Lecture 8:** XML Data Management (**Apr. 16**)





# Outline of the Course (2)

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- **Mid-exam:** (**Apr. 23**)
- **Part III Data Storage & Querying**
  - **Lecture 9:** File Structures (**April 30**)
  - **Lecture 10:** Index Structures (**May 7**)
  - **Lecture 11:** Query Processing (**May 14**)
  - **Lecture 12:** Query Optimization (**May 21**)
- **Part IV Transaction Management**
  - **Lecture 13:** Transaction Processing (**May 28**)
  - **Lecture 14:** Concurrency Control (**Jun. 4**)
  - **Lecture 15:** Database Recovery (**Jun. 11**)
  - **Course review** (**Jun. 18**)



# Grading Scheme

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- Attendance & assignments (15%)
- Course projects (25%)
- Midterm exam (20)
- Final exam (40%)



# Punishment Policy

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- Plagiarism or cheating in assignments, course projects, and examinations is absolutely unacceptable. Once found, your grade will be definitely set to F!



# Course Webpage

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- <http://admis.fudan.edu.cn/courses/2014/database.htm>
- Lecture ppts are available on the webpage
- Assignments must be finished and delivered before 12:00am of the next Wednesday