





Web page: http://www.cs.washington.edu/444

- Lectures/Sections slides will be posted there
- Homeworks/Labs will be available there
- · Mailing list
 - Announcements, group discussions
 - Your @uw.edu address is already subscribed

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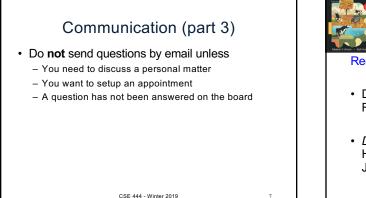
5

Communication (part 2)

Message Board:

- https://piazza.com/washington/winter2019/cse444/home
- · Ask questions about the course, labs, homeworks
 - Feel free to answer questions too! If you think you know how to answer but are not sure, simply say so
 - Staff will check & answer questions regularly
 - If your question has not been answered in 12 hours, let me know
- Do not post any fragments of your code

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6

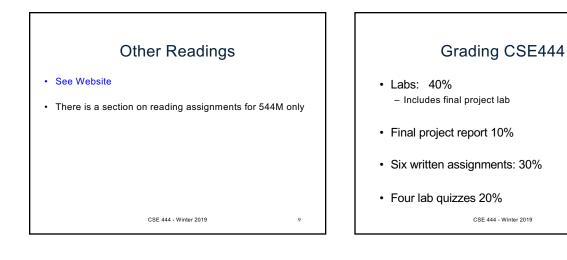
Recommended textbook (pick one)

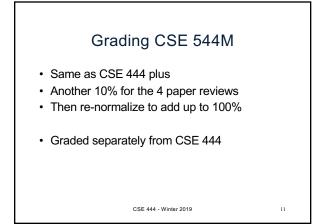
• Database Management Systems. **Third Ed**. Ramakrishnan and Gehrke. McGraw-Hill.

Textbooks

• Database Systems: The Complete Book, Hector Garcia-Molina, Jeffrey Ullman, and Jennifer Widom. **Second edition**.

See course website for recommended chapters





Acks: SimpleDB lab series originally developed by Prof. Sam Madden at MIT. We work with them on improving/extending.

Six Labs

10

- Lab 1: Build a DBMS that can scan a relation on disk
 RELEASED TODAY! Part 1 of this lab is due on Monday!
- Lab 2: Build a DBMS that can run simple SQL queries and also supports data updates
- Lab 3: Add a lock manager (transactions)
- Lab 4: Add a write-ahead log (transactions)
- Lab 5: Add a query optimizer

Warning: I **will** run cheating-detecting software! I have solutions from past years too.

About the Labs

Managed on GitLab:

https://gitlab.cs.washington.edu/cse444-19wi/simple-db-[your gitlab id] Logistics:

- To be done INDIVIDUALLY!
- Each lab will take a significant amount of time
- Labs build on each other

Purpose

- Hands-on experience building a DBMS
- Deepen your understanding significantly
- We will build a *classical* DBMS

13

15

Six Homeworks Homework 1 released today. Due next week Written assignments – Print out pdf and fill in answers Help review material learned in class Prepare you for the labs One homework before each corresponding lab Go beyond what we implement in labs

To be done INDIVIDUALLY

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14

16

Quizzes

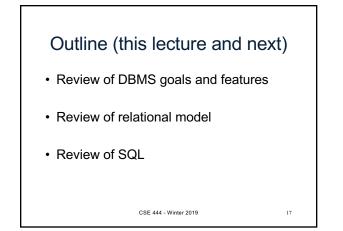
- One quiz in class for each of labs 1-4
 - Tests depth of your knowledge
 - No notes. No code. Answer from memory
 - Only one or two open-ended questions
 - Example: "Explain how data is stored in SimpleDB"
 - Grades:
 - 9-10: Strength! Exceptional understanding and explanations
 - 8: You got it!
 - 7 or less: Developing knowledge some gaps
 - O: Did not show up or wrote nothing
 - Important: We grade based on the depth of knowledge demonstrated in your answer

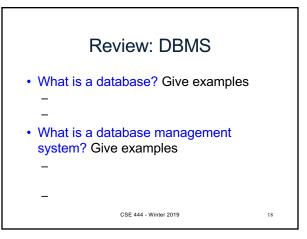
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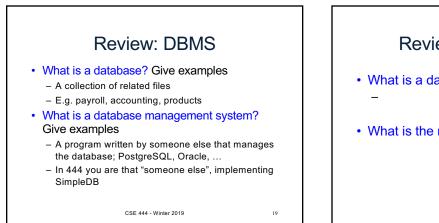
Late Days

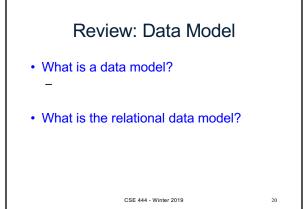
- · Total of 4 late-days
- Use in 24-hour chunks on hws or labs
- At most 2 late-days per assignment
- No late-days can be applied to the final project due during finals week

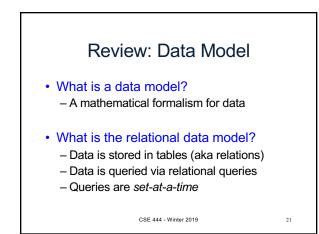
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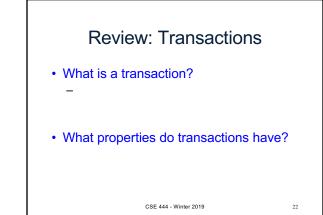














Some Key Data Management Concepts

- Data models: Relational, XML, graph data (RDF)
- · Schema vs. Data
- Declarative query languages
 Say what you want not how to get it
- Data independence
 Physical: Can change how data is stored on disk without maintenance to applications
- Query compiler and optimizer
- · Transactions: isolation and atomicity

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25

Course Content

Focus: how to build a classical relational DBMS

- Review of the relational model (lecture 1 and 2)
- DBMS architecture and deployments (lecture 3)
- Data storage, indexing, and buffer mgmt (lectures 4-6)
- Query evaluation (lectures 7-8)
- Query optimization (lectures 9-12)
- Transactions (lectures 13-19)
- Parallel query processing (lectures 20-23)
- Replication and distribution (lectures 24-25)
 NoSQL and NewSQL (lectures 26-27)
 - NoSQL and NewSQL (lectures 26-27) CSE 444 - Winter 2019

26

Relational Model...

- The foundation of our traditional database management system
- We'll continue our review of the relational model next lecture ...

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