



CS 442: Database Management

Spring 2023

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OBJECTIVES:

CS 442 provides introduction to the design and querying of relational databases. Topics include: relational schemas; keys and foreign key references; relational algebra (as an introduction to SQL); SQL in depth; Entity-Relationship (ER) database design; translating from ER models to relational schemas and from relational schemas to ER models; functional dependencies; and normalization.

PRE-REQUISITE:

Students are expected to have good familiarity with mathematics and logic – having taken CS182 & CS385

TEXT:

Database System Concepts (5th Edition) – Required
by Silberschatz, Korth & Sudarshan (ISBN: 0072958863), McGraw Hill

TOPICS:

Introduction (Ch. 1), Relational Model (Ch. 2), SQL (Ch. 3), Advanced SQL (Ch. 4), Relational Database Design and the E-R Model (Ch. 6), Relational Database Design (Ch. 7)

GRADING:

- Quizzes: 20%
- Homework Assignments: 20%
- Mid-term Exam: 25%
- Final Exam: 35%

There will be a variety of home assignments including the DB/SQL programming assignments and written assignments (e.g., exercise questions at the end of each chapter). There will be 2 to 3 DB/SQL programming assignments. The written assignments will not be graded but they are an important part of the course, so you should make sure you are able to solve them on your own. The DB programming assignments submitted by each student must be his/her own. The Stevens Honor System will be strictly enforced, and any violation will result in the grade of F for the course. There will be no make-ups or late submissions. Class participation is strongly encouraged and will be used to resolve borderline grades.

PROGRAMMING ENVIRONMENT:

Students are encouraged to use their own machines (e.g., laptops) for all of the programming assignments. *PostgreSQL* is the relational DBMS for the course – Please download it and install on your machines as soon as possible.

MISCELLANEOUS:

I may be out of town a couple times during the semester. Announcements will be posted once the arrangements are made for the make-up lectures.

- **IMPORTANT** – Please use **Canvas** to send all of your emails to me and the TAs. Please do not use any other email accounts, including the Stevens accounts, as it will impede my ability to provide timely responses.
- **No recording of the lectures is permitted**. Also, students are not permitted to take photos of the white board, except when you have my permission – I will let you know when it's appropriate to take photos.