

# **CS387 Database design**

# Instructor

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- PhD from France - 1999  
Research: Automated deduction and theorem proving, New technologies in education, verification of hardware and software, data mining.
- French accent.
- Teaching in France, in Cambodia, in USA (State University of New York at Stony Brook).
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# What is cs387?

- CS 387 prepares you to face the real world of databases application and internals development.
- It presents the fundamental concepts of database management. It provides a study of data models, data normalization; data description languages and their design and form, query facilities including relational algebra, relation calculus, and query functions. It is a design class and not a programming class.
- It will focus on the SQL query language and if we have time we will look at JDBC.

# Description

- <http://www.csis.pace.edu/~scharff/cs387>
- Everything is on the web.
- Class time  
Lecture + Exercises
- Office Hours - Where?
- Textbooks
- Exams
- Assignments
- Grades
- Academic dishonesty
- Guidelines for assignments

# Prerequisites

- High-level language programming
  - JAVA
- Data structures and algorithms
  - Trees, pointers, searching, sorting
- Discrete mathematical structures
  - Sets, relations, graphs
- Formal logic
  - Propositional logic, truth table, predicates

# Schedule

- – Introduction (Chap 1, Chap 23, Part 9)
- Entity Relationship model (Chap 2)
- Relational data model (Chap 3)
- Relational algebra (Chap 3 - sec 2)
- SQL and other relational languages (Chap 4 and 5)
- Relational Normalization theory (Chap 7)
- Integrity and security (Chap 6)
- Indexing and hashing (Chap 12)
- Embedded SQL (Chap 4)
- Query processing (Chap 13)
- Dynamic SQL (Chap 4)
- Languages and platforms keywords: Access, SQL server, Sybase, Oracle, SQL, JDBC, ODBC, JAVA, XML...