

CMSI 486

INTRODUCTION TO DATABASE SYSTEMS Fall 2005

Final Review Sheet

All material from the start of the semester up to today is fair game for the final. In addition to the coverage for the midterm (please see the Midterm Review Sheet for that), we also have the following topics:

- Relational database programming in Java, including the data access object design pattern
- Functional dependencies
- Normal forms, especially BCNF and 3NF
- Database application design and architecture
- Transactions
- Concurrency
- Recovery
- Indexing & hashing
- Query processing

The final will also be open-computer. As always, this is not an excuse for not studying. Those who live by the 'net will also die by it. With a computer (and the Internet) at your fingertips, you are asked to do *more work in less time* and to do this work *more accurately*. The following question types are all possible for the final, in addition to the types of questions asked in the midterm:

- Sketch out a UML design for a particular database application
- Specify the functional dependencies for a particular database application
- Determine whether or not a relational schema is in some normal form
- Derive a relational schema that is in some normal form
- Prove something based on a set of functional dependencies
- Define, describe and/or reason about a transaction management topic
- Describe and/or compare one or more concurrency control protocol
- Define, describe, and/or reason about a recovery system topic, especially log-based recovery
- Define, describe, reason about, and/or compare one or more indexing and hashing approach
- Define, describe, reason about, and/or compare one or more query processing algorithms, paying particular attention to pros and cons as well as applicability to certain types of queries

Textbook reading includes: SKS Chapters 1–4, 6–8, 12, 13, 15–17, and portions of Chapter 26. Good luck and have fun!