Final Exam for CS6083

- Tuesday, 12/18, at 3:20pm in the usual room
- 130 minutes
- Closed book, closed notes
- Exception: one sheet of handwritten notes
- No phones, iPads, calculators, watches, etc.
- Covers entire semester, excluding chapter 16
- Stuff before AND after midterms

Exam Topics

- SQL Queries (of course)
- RA and RC

- Database Design (given a scenario, design ...)
- ER Diagrams, translate to relational and back
- Views, constraints, triggers
- No material from chapter 5 except for triggers
- Normal forms and normalization (BCNF, 3NF)

- Disk models, external sorting, caching

Exam Topics

- Index structures
- B+-trees and extendable hashing
- Insertion and deletion algorithms (B+, hash)
- Analyzing size, depth, and speed of indexes
- Clustered, unclustered, dense, sparse indexes
- Four join algorithms and their performance
- Basic concepts in query execution and optimization
- Estimating query costs (see homework #4)

Exam Topics

- Basic concepts in transaction processing
- Transactions and ACID properties
- Serializability (general, conflict, no view)
- Deciding serializability of a schedule
- Recoverability and cascading aborts
- 2PL locking protocols and their properties
- Deadlock prevention and detection
- Timestamp, Graph, ~~Validation protocols~~
- ~~Recovery algorithms~~

Exam Format

- Some standard type problems as in HWs and MT
- Writing queries, drawing ER, designing schema
- Inserting into indexes, analyzing indexes
- Is this serializable? Has deadlock? etc.
- Maybe some questions that need 2-3 sentence explanations
- Some problems that are true/false questions
- Using gradescope again
- Bring a pen (not pencil), follow instructions