

Recap of Feb 20: Database Design Goals, Normalization, Normal Forms

- Goals for designing a database: a schema with:
 - simple, easy to phrase queries
 - avoids redundancies (repetition of information)
 - avoids anomalies
 - good performance
- Normalization
 - decompose complex relations
 - Lossy decompositions
 - Functional Dependencies
- Normal Forms: 1NF, 2NF, 3NF, BCNF
 - BCNF or 3NF: lossless decomposition in both
 - BCNF can't always ensure dependency preservation
 - 3NF sometimes requires null values or redundant information

Getting Physical: Storage and File Structure (Chapter 11)

- Up until now we have examined database design from a high-level conceptual view, passing over actual implementation and underlying hardware.
 - Appropriate focus for database users
 - But hardware does have an influence on implementation, and implementation does have an influence on what conceptual designs will be more efficient and useful
- Now we get physical -- examine physical storage media to give a background for later focus on implementation of the data models and languages already described

Chapter 11

At this point we are focussing on the following sections

- 11.1 Overview of Physical Storage Media
- 11.2 Magnetic Disks
- 11.3 RAID (very briefly)
- 11.4 Tertiary Storage
- 11.5 Storage Access
- 11.6 File Organization
- 11.7 Organization of Records in Files
- 11.8 Data-Dictionary Storage