

Cpt-140 Database Concepts

Week 7: The Relationship Model 3 (RM3)

Learning Objectives.

In this topic we look in more detail at decomposition. When decomposition is done properly, the overall schema can be demonstrably improved. When done badly, it can lead to a schema with more problems than we started with. Understanding Lossy joins and the spurious tuples they produce is a key factor. The tools and techniques covered in this topic help with assessing the current state of a relation and the process for improving it.

- ☐ Know what is meant by Lossy and Lossless joins.
- ☐ Be able to explain what spurious tuples are and how they are created.
- ☐ Understand the Chase Test and what its for.
- ☐ Know how to project FDs on to a subset of a relation.
- ☐ Be able to derive the Minimal Basis of a set of relations.
- ☐ Know the process for decomposition into BCNF.
- ☐ Be able to decompose a relation until it is in BCNF
- ☐ Understand the difference between a relation in BCNF and a schema in BCNF.
- ☐ Be able to explain the unenforceable FD problem.
- ☐ Know how to decompose a relation to 3NF.
- ☐ Know the tests for both BCNF and 3NF.

Reading for this week

These Sections from the text book.

3.2.8, 3.3—3.5