

Homework 4 – due April 27 beginning of class. All homework unless otherwise noted must be done independently. No late homework accepted.

Chapter 7

- Exercise 7.2
- Exercise 7.4
- Exercise 7.6
- Exercise 7.11
- Exercise 7.12
- Are there any inferred functional dependencies in the functional dependencies in the set of FDs for exercise 7.11?
- Show that the following decomposition of the schema in Exercise 7.2 is not a lossless-join decomposition: (A, B, C) and (C, D, E).
- Give a lossless join decomposition into BCNF of schema R of Exercise 7.2.
- Give a lossless-join, dependency-preserving decomposition into 3NF of schema R of Exercise 7.2.
- For each of the following relation schemas and sets of FD's:
 - R is (A, B, C, D) with FD's $A \rightarrow B$, $B \rightarrow C$, $C \rightarrow D$, $D \rightarrow A$.
 - R is (A, B, C, D) with FD's $B \rightarrow C$ and $B \rightarrow D$.

Identify candidate keys for R

Indicate BCNF violations and decompose if necessary.

Indicate 3NF violations and decompose if necessary.