Homework Assignment 5
(due Wednesday, March 7, 2012)

- Exercise 3.3.1 part a) only, Exercise 3.3.2, and Exercise 3.3.4.

- Problem 1: Let $R$ be a relation schema with attributes $A, B, C, D$ and assume that the functional dependencies $A \rightarrow B, C \rightarrow D, D \rightarrow A$ hold on $R$.
  1. Give at least two different reasons to the effect that $R$ is not in Boyce-Codd Normal Form.
  2. Give a BCNF, lossless join decomposition of $R$.

- Problem 2. Let $R(A, B, C, D, E)$ be a relation schema with the indicated attributes and assume that the functional dependencies $A \rightarrow B, BC \rightarrow E, ED \rightarrow A$ hold on $R$.
  1. Explain why $R$ is not in Boyce-Codd Normal.
  2. Give a BCNF, lossless join decomposition of $R$. 