

# Introduction to Databases

## Homework 2

This set of exercises will be helpful in preparing for the exams. They are intended to encourage you to become familiar with the relational approach to high-level database design.

The textbook exercises are given at the end of the section of interest.

1. Basic Relational Model: Textbook exercise 2.2.1
2. ER to Relational: Textbook exercise 4.5.1
3. ER to Relational: Textbook exercise 4.5.3
4. Functional Dependencies: Textbook exercise 3.1.1
5. Functional Dependencies: Textbook exercise 3.2.1
6. Normalization to BCNF: Textbook exercise 3.3.1(a) and (b)
7. Normalization to 3NF: Textbook exercise 3.5.1 (for (a) and (b) from 3.3.1)
8. Multivalued Dependencies: Textbook exercise 3.6.3 (a) and (b)

The relational data model, particularly in regards to functional and multivalued dependencies, may remind you of formal logic in general, and that's because it was heavily influenced by it. Another logic-based model is Datalog (and, more generally, Prolog). These models directly use forms of logic to both represent data and to make queries. Read about Datalog and Prolog. Is Tom a cat? There is nothing to hand in here.