Homework 1

Intro to Databases, Relational Data Model, and Basic SQL

Total points: 40

Complete the following end-of-chapter exercises in the textbook. Submit a document with your solutions.

Chapter 1

1.3 (3 pts.)
1.8 (2 pts.)
1.9 (2 pts.)
1.11(2 pts.)
1.12 (3 pts.)

Chapter 2

2.6 (3 pts.)
2.9 (4 pts.) - Copy the Banking database schema from fig. 2.15 and underline your choice of primary key for each relation and *italicize* the foreign keys in the referencing relation only.
2.10 (2 pts.)
2.13 (4 pts.)
2.16 (5 pts.) – This question is not included in the textbook.

- Differentiate between the following
  - a) Superkey vs. candidate key
  - b) Primary key vs. foreign key
  - c) Schema vs. instance
  - d) Procedural vs. non-procedural query languages
  - e) Selection vs. projection operations

Chapter 3

3.25 (10 pts.) – This question is not included in the textbook.

- DDL/DML written exercise.
  - a. Write SQL DDL statements corresponding to the schema in Fig. 3.18 (Insurance database) in the textbook. Make any reasonable assumptions about the data types and be sure to declare primary and foreign keys.
  - b. Write SQL DDL/DML statements to do the following:
    - i. Alter any one table to include a new, meaningful attribute.
    - ii. Insert one tuple each into each of the tables. Make sure the data follows all integrity constraints.
    - iii. Delete one tuple from any table (do not delete all tuples).
    - iv. Update any one tuple from any table.