CS 457 / 657

Homework 2 Questions

1. **(10pts) Exercise 4.1.1** Design a database for a bank, including information about customers and their accounts. Information about a customer includes their name, address, phone, and Social Security number. Accounts have numbers, types (e.g., savings, checking) and balances. Also record the customer(s) who own an account.
   a. **(5pts)** Create schemas for each relation using the schema notation from the book.
   b. **(5pts)** Provide an Entity Relational Diagram.

2. **(10pts) Exercise 4.1.2** Modify your solution to the first question as follows:
   a. **(5pts)** Change your diagram so an account can have only one customer.
   b. **(5pts)** Further change your diagram so a customer can have only one account.

3. **(20pts)** Consider a database schema for a College Ranking System.
   a. **(5pts)** Identify at least 5 relations.
   b. **(5pts)** Create schemas for each relation using the schema notation from the book.
   c. **(5pts)** Provide an Entity Relational Diagram.
   d. **(5pts)** Prove your design follows third normal form (3NF).