1. Consider the problem of setting up a course registration system for a college. There are four types of records you need to maintain:

- student information, which includes name (not necessarily unique), ID number (unique), and class year;
- professor information, which includes name (not necessarily unique), ID number (unique), and department;
- course information, which includes department (e.g., CSCI), course number, and professor (assume that there is only one section per course); and
- information about enrollments in courses indicated by course and student.

(a) **(20 points total)** Give the *database schema* for the course registration system by presenting a *relational schema* for each of the four relations representing the information types described above. For each relation, specify the domain for each attribute and indicate the key values for each relation as we did in lecture. Try to keep the amount of information to a minimum (i.e., don’t repeat values if you don’t need to), but make sure to provide enough information to remove ambiguities.

(b) **(20 points total)** Translate your relational schemas from the previous problem into SQL. Be sure to indicate key values in your SQL code.

2. **(20 points for relational algebra, 20 points for mySQL)** For Exercise 2.4.1 on p. 52 of your text, answer parts a, c, d, and f. The exercise asks you to write relational algebra expressions. In addition, write mySQL queries that return the desired information (for (c), use ‘Dell’ as the maker in your mySQL query). You can test your queries on the csci305.guattery database.