Part 1: Reading Assignment. Read the following sections in the textbook. No reading questions assigned this week.

- Ch. 4: 4.1–4.2
- Ch. 8: 8.1–8.2

Part 2: More Database Queries. Use the database (cpsc321) that has been installed for the course to answer the following questions. For each question below, write a single SQL query to answer the question and show the result of the query against the above database. If the answer has more than 10 rows, you only need to show the first 10 rows (however, your query should work generally over the instance).

1. Write an SQL query using subqueries to find the actors/actresses that have not acted in a ‘G’ rated film.

2. Write an SQL query to find the film titles that all stores carry (i.e., in all store’s inventories). Assume there can be any number of stores. Thus, your query must not assume a certain number of stores. Your query also cannot use COUNT(). (Hint: it isn’t difficult using subqueries to find stores that don’t have a particular film.)

3. Write an SQL query to find the percentage of ‘G’-rated movies each actor/actress has acted in. Your query should return the id, first name, and last name of each actor/actress and the corresponding percentage. Your results should be sort actors/actresses from highest to lowest corresponding percentage. For this query, you only need to consider actors/actresses that have acted in at least one ‘G’-rated movie.

4. Write an SQL query using an outer join to find all of the film titles that do not have any actors

5. Write an SQL query using an outer join to find all of the film titles that are in a store’s inventory but that have not been rented.

6. Write an SQL query using an outer join to find all of the film titles that are not in any store’s inventory.

7. Write an SQL query to find the number of actors that acted in each film. Return the film_id and the number of associated actors. Based on your query result, how many films are there without an actor? Note that there should be more than one such film! Hint: COUNT(columnname) only counts the number of non-NULL values in the values of columnname.

Part 3: Normalization. Answer the following questions and turn your answers in with your homework assignment.

8. Using your answers to Homework 1, identify all of the non-key, non-trivial functional dependencies in your tables. Give the original tables and the corresponding functional dependencies. (Note if your tables do not contain any non-key, non-trivial functional dependencies, either:
(a) modify your tables to introduce them (e.g., by creating one or two “mega” tables from your original tables), or (b) find someone in the class whose Homework 1 does and use it instead.)

9. Based on your answer to above, list all of the redundancies (as discussed in class) that exist in your tables.

**Turn in** a hard-copy print out of the cover sheet, your reflection, a script containing the queries answering the above questions, the result of running your script (queries) against the cpsc321 database, and your answers to the last two questions. In addition, submit your script to the online class submission page by the due date.