Answer the questions below and turn in a hard-copy of your answers in class by the due date.

**Part 1: Reading Assignment.** Read the following sections in the textbook.

- Ch 4: 4.1.2
- Ch 8: 8.1–8.2

**Part 2: More Advanced SQL.** Use the database 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 answer against the above database. If the answer has more than 5 rows, you only need to show the first 5 rows.

1. Using an outer join, find all of the ids and titles of films that are not in any store’s inventory.
2. Without using an outer join, find all of the ids and titles of films that are not in any store’s inventory.
3. 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: \( \text{COUNT(\text{column name})} \) only counts the number of non-NULL values in the values of \( \text{column name} \).

**Part 3: Normalization.** Answer the following questions.

4. 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 dependences. (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.)
5. Based on your answer to 4 above, list the redundancies that exist in your tables.

**Turn in** a hard-copy print out of the cover sheet, your design document, a script containing the queries answering the above questions, and the result of running your script (queries) against the `cpsc321_DB` database. Also include your written answers to Part 3. Submit your script to the online class submission page by the due date.