Review Questions for Class #2 – The Relational Database Model

1. What is the difference between a database and a table?

2. What does a database expert mean when (s)he observes that a database displays both entity integrity and referential integrity?

3. Why are entity integrity and referential integrity important in a database?

4. A database manual notes that "the file contains two hundred records, each one of which contains nine fields." Use appropriate relational database terminology to "translate" the preceding statement.

5. Use the small database shown below to illustrate the difference between a natural JOIN, an equiJOIN, and an outerJOIN.

   Insert Figure 1 Here

6. Draw the basic Entity Relationship diagram for the database shown above.

7. Suppose that you have the Entity Relationship model shown below.

   Insert Figure 2 Here

   How would you convert this model into an Entity Relationship model that displays only 1:M relationships? Draw the revised entity relationship model.

8. What are homonyms and synonyms, and why should they generally be avoided in database design?

9. How would you implement a 1:M relationship in a database composed of two tables? Give an example.

   Suppose that you are using the following database composed of the two tables shown below.
a. Identify the primary keys.
b. Identify the foreign key.
c. Draw the Entity Relationship model.
d. Draw the relational schema to show the relationship between DIRECTOR and PLAY.
e. Suppose you wanted quick lookup capability to get a listing of all the plays directed by a given director. What table would be the basis for the index table, and what would be the index key?
f. What would be the conceptual view of the index table described in part e? Depict the contents of the (conceptual) index table.