Review Questions for Class #3 – Entity-Relationship Modeling

1. What are the main building modules of the Entity Relationship model? Discuss each one.

2. What is a composite entity, and when is it used?

3. Why is data modeling considered a "communication tool?"

4. How are database models related to the level of data abstraction?

5. How would you (graphically) identify each of the following E-R model components?
   a. An entity
   b. An attribute
   c. A relationship

6. What two courses of action are available to a database architect when a multivalued attribute is encountered?

7. What is a derived attribute? Give an example.

8. How is a relationship between entities indicated in an E-R diagram? Give an example, using the Crow’s foot data models.

9. What is a weak entity, and how is it represented in an E-R diagram? Give an example, using the Crow’s foot data models.

10. How is a composite entity represented in an E-R diagram, and what is its function? (Illustrate both the Chen and the Crow’s Foot models.)

11. What three (often conflicting) database requirements must be addressed in database design?

12. Briefly explain the difference between single-valued attributes and simple attributes. Give an example of each.

13. What are multivalued attributes, and how can they be handled within the database design?