Refresher Practice with E-R Diagrams:
Simplified Data Model for a Hospital Database

Background: You learned how to create E-R diagrams when you took ISDS 402 or its equivalent database course or experience. If not, you read Chapter 6 thoroughly as an alternative. This exercise serves as extra practice and a refresher, and is a good opportunity to seek help from the instructor before completing the E-R diagram for your project. In this exercise, you will create the diagrams based on some simple narrative descriptions. In real projects, you would base your process and data models on information received in requirements gathering and use cases.

Remember, logical E-R diagrams are *system-independent*, meaning that you could later design and/or implement the system using any number of different software packages (including any number of different database management systems).

This is also a good chance to practice using Visio for diagramming. A brief overview of Visio was given in the course lectures and/or an online video by Dr. Barlow. Please contact him if you need help with Visio.

Instructions: Create an E-R diagram for a hospital database[1], using the data description in the following bullet points. Each entity should include an identifier (like a primary key in DB design terms) among other attributes. Show relationships between entities, including cardinalities, using Crow's Foot notation. The information that needs to be stored in the database includes the following:

- Names, addresses, and social-security numbers of doctors and nurses.
- Patients, including their names, addresses, and patient IDs.
- Patients are each assigned to a ward (room). Each ward has a number assigned to it.
- Nurses are assigned to zero or more wards. Each ward always has a nurse assigned.
- Doctors are assigned to zero or more patients. Patients may or may not have a doctor assigned, and they may have more than one doctor. Patients in the same ward may have different doctors but will always have the same nurse.

Dr. Barlow will post the answer to this exercise.

[1] Obviously, the model we are creating is much more simplified than a database for a real hospital. We keep it simple for learning the principles, and our model will include some of the major tables that would be included in a real database.