Due date: October 1, 2020 (Thursday)

Problems:

**Problem:** Consider the following set of requirements for a hospital registration system that is used to keep track of doctor’s related information and patients can use it to make an appointment in advance. This is similar but not identical to the database shown in Figure 1.2:

(a) The hospital keeps track of each doctor's name, doctor ID, social security number, birthdate, language, specialties and position. Both social security number and doctor ID have unique values for each doctor. One doctor must belong to one department. One department must be managed by one doctor.

(b) Each department is described by a name, department ID, department category, department phone, and established date. Both name and department id have unique values for each department.

(c) Each Diagnosis Time has a start date time, and capacity. One diagnosis time belongs to one doctor and each doctor can have several diagnosis time.

(d) Each patient has patient ID, name, sex, birthday, address, and social security number. Some hospital records need to refer to the city, state, and zip of the patient's address, and to the patient's last name. Both patient number and social security number have unique values for each patient. Patient can choose one diagnosis time of one doctor to register for an appointment. Once the appointment was made, patient will get one registration number and the estimated time.

(e) Each nurse has nurse ID, name, social security number, nursing credential and nursing certification. Both nurse ID and social security number have unique values for each nurse. Each nurse must belong to one department and take care of one or more patients.

Design an ER schema for this application, and draw an ER diagram for that schema. Specify key attributes of each entity type and structural constraints on each relationship type using \((\text{min}, \text{max})\) notation. Note any unspecified requirements, and make appropriate assumptions to make the specification complete. **You only need to draw an ER diagram to show your design.**