SJSU CMPE 226 HW1 FALL 2015

1. Given the following requirements for pharmaceutical company, drug, pharmacy, patient, and doctor,

- Each pharmaceutical company has a unique name and multiple phones, and may manufacture one or more drugs.
- Each drug has a name, and is manufactured by exactly one pharmaceutical company. Drugs made by different pharmaceutical companies may have duplicated names. Drugs made by each pharmaceutical company has unique name. Each drug may be sold by multiple pharmacies.
- Each pharmacy has a unique name, and a phone. It sells one or more drugs, each with a price. Each pharmacy may be shopped by multiple patients.
- Each doctor has a unique NPI number and name. Each doctor is the primary doctor of at least 3 up to 20 patients. A doctor may be visited by many patients (primary or not).
- Each patient has a name and a unique SSN, and has exactly one primary doctor. A patient may office visit many doctors (primary or not). Each office visit has a date. A patient may buy multiple drugs, each of which with quantity. Each patient may shop at multiple pharmacies.

a. Draw the "regular" ER diagram without using the (min, max) notation. Specify entities, weak entities, attributes, multi-valued attributes, keys (underline), partial keys (dashed underline), relationships (identifying or not, including name, type, participation, cardinality ratio), etc. State clearly any *additional* assumptions you make.

b. Draw the ER diagram with the (min, max) notation. State clearly any *additional* assumptions you make.

c. In terms of *expressive* capabilities of requirements, is there any difference between these two ER diagrams? If so, where and why? Use a specific example to illustrate it.

d. The name of the software tool (Dia, yEd, Visio, etc) for a and b. Hand-drawing is not allowed.

Submit the following files as individual files (do not zip them together):

- `CMPE226_HW1_YourName` (.pdf, .doc, or .docx), which includes answers to a, b, c, and d, where a and b are embedded ERD images (jpeg, png, etc) exported from supporting files (with your name and L3SID in each ERD). Do NOT embed ERD *screenshot* as it is not readable. Any unreadable ERD images will receive 0 point for the entire homework.
- Supporting files (with the *native* file format of the software tool). You must include your name and L3SID into upper center portion in each ERD. Any submission without supporting files (or without embedding your name and L3SID) will receive 0 point for the entire homework.
    - `CMPE226_HW1_YourName_Reg_ERD` (with proper file extension)
    - `CMPE226_HW1_YourName_MinMax_ERD` (with proper file extension)

The ISA and/or instructor leave feedback to your homework as comments and/or in Crocodoc of your submission. To access Crocodoc, click "view feedback" button. For details, see the following URL:
http://guides.instructure.com/m/4212/l/106690-how-do-i-use-the-submission-details-page-for-an-assignment