CSCI 585 (Fall 2015)
HW1

Please do check class policies posted as a presentation on D2L-> contents -> overview.

Objective: Design a conceptual schema using the ER data model.

Use the Chen's model to draw an ER diagram that captures the following concepts implemented by a hypothetical classified advertisement website called *MandysList*. The website will be hosting ads posted by users who belong to different communities. All entities need to have primary keys. Also, entities need to contain any attributes that are needed to support the requirements described in this document.

- *User Information:*
    - A user has a unique username as well as a password which are used in combination to login to MandysList. The user also provides a name, date of birth, gender and email address.
- *City and region:*
    - A city (like LA) has a state, name, and description. A city may include one or more regions (like central LA, West LA, etc.) where a region has its own unique id and has a name. Each region belongs to exactly one city.
- *Community and Category:*
    - A community (like the community of graduate students) has a name and a unique identifier, as well as a description. A community includes some categories (like books for sale, place for rent, etc.) where each category is an umbrella term for a topic of interest for members of that community. Each category belongs to one community.
    - Each user can follow a number of categories and would be able to see a list of ads created since the last time he logged out.
- *Ad:*
    - A user may create advertisements (a.k.a. ads). An ad has a title, price, detailed description, post date, and the last date the ad was edited. It can also have one or more images and if it has, we need to store in the database the URL of the Amazon S3 bucket (which is a cloud-based storage system) so we can later access the images of the ad (one URL for all images).
    - An ad is assigned to a specific category. Also, an ad is assigned to a region, so the visitors of the website know where the item is located. E.g.,

a student can post the ad in the 'books for sale' category in the 'grad. students' community in the 'central LA' region.
    - An ad has a status, which is a value from the list: active, expired, and deleted. Our system does not delete the ads and just 'soft deletes' them, meaning that it assigns a status of 'deleted' to those ads that were deleted by the user.
    - An ad can be 'liked' by users

- *Messaging*:

    - Each user has an inbox and an outbox and may send a message to another user. A message contains a topic, a body, a receiver and a sender. Each time a user sends a message to another user, the message lands in the recipient's inbox and the sender's outbox.

Deliverables: A pdf file containing the ER diagram of the concepts supported by MandysList. Your document should indicate all the features that can be represented in the model you use. E.g, primary keys, relationships, relationship cardinalities and degrees, total participations, attributes, etc. **You may make reasonable assumptions** if they are not specified in the specification but make sure to state them in your documentation[1]. Such assumptions should not contradict with the assignment description.

Frequently asked questions and answers:

- Do I have to use specific software to draw the diagram for the homework?

No. Feel free to use your pen and paper and submit a pdf of the screenshot of it. However, using software might ease your life for the next assignment where you have to provide (a to-be-specified subset of) the schema.

- Do I have to draw an ERD or an EER diagram?

The assignment is not too complex and does not require the additional features of the EER.

- Do I have to write down the schema and any queries for this part?

No. For this assignment you only draw the ER diagram. Those would show up in the next assignment.

- Can I use Crow's feet model?

No. Only Chen's model is accepted for the purpose of this assignment.

[1] Please avoid adding too many complicated or detailed assumptions (if any). After all this is a homework assignment and not a database design for a detailed billion-dollar project, so the rule of thumb is to stick to the requirements explained in this document.