

**COEN 280: Database Systems**  
**Spring 2019**  
**Homework Assignment 1**  
**Due: Wednesday, 4/17/2019 @11:59pm**

**Project Description**

The goal of this assignment is to design a conceptual schema using the (E)ER Data model.

**(E)ER data model (50 points)**

Design a schema that incorporates the specification described below as efficiently as possible. You should submit a written diagram of your schema design using the notation given in the class. In this diagram, indicate all the classes, subclasses, relationships (weak & strong), relationship cardinalities and degrees, total participations, attributes, and primary keys. In addition, specify whether each attribute is single-valued or multi-valued, stored or derived, and atomic or composite. In your design, you can make and state reasonable assumptions if they are not specified in the specification.

**Design Specification**

The Internet Movie Database (IMDB) is an online database of information that stores information about shows, movies and TV shows, casts and about actors and directors who act and direct these shows, biographies, plot summaries and reviews. You are going to design the database system for IMDB ([www.imdb.com](http://www.imdb.com)). It should store and manage the following information but it is not exactly same as real IMDB website. However, if you have ambiguous parts you can assume data type based on real IMDB system:

**IMDB User**

An IMDB user has a unique ID, first name, last name, gender, birthdate, birthplace, age, email, and a profile picture.

An IMDB user can rate any movie or TV series on a scale of 1-10 and provide reviews. Note that the user should be able to review the same movie multiple times.

**Movie**

A Movie has a title, release year, multiple genres, production cost, and a serial number assigned by imdb.com. A movie can be rated by multiple users. A movie is produced by a production company under a contract number. A movie can be Action, Drama or Comedy. A movie is made up of multiple scenes. Each scene has a number. A scene is belonged to a movie.

A movie could be nominated in different nomination categories in an awards event and wins a nomination category.

**User Reviews**

Review has an ID, publish date, and textual content where the content can be text, photo, or a short video. It has one author and belongs to one movie or TV series. Also a review has number of stars and number of total votes. Votes can be categorized as helpful and non-helpful with a list of users that voted for each of these movies or TV series. Moreover, a review has a list of comments where each comment has an author, textual content, and date.

**Person**

A person has a unique ID, first name, last name, gender, birthdate, birthplace, and a photo. Place of birth includes: Nation, State or Province, and Town. A person can be a director or an actor. A director, directs movies. An actor cast in movies or TV series with a specific role under a character name.

An actors or director could be nominated in different nomination categories in an awards event and wins a nomination category.

A person can be an ADULT or MINOR based on age (18 years or older). A MINOR has guardians. An ADULT marries another ADULT in a particular year.

**Photo**

A Photo has a name, an author, and a description. Each photo is either a profile photo or a personal photo.

**TV Series**

A TV series has a name and a TV network. A TV series is produced by a production company under a contract number. An actor could be a guest star in an episode.

**Episode**

An episode has an episode number, title and length. A TV series has a number of episodes. Episodes belong to TV series. An actor is a regular in every episode.

**Submission Guidelines**

You are REQUIRED to submit a pdf to Camino. It should also include your reasonable assumptions.

