Project 1.1 COSI 127B

Due: Thursday 8th February, 2024 at 23:59

In the first project, you will design a simple website like IMDB that uses a movie database. This application will have a simple UI that is connected to a MySQL database.

As the first deliverable, you have to design an Entity-Relationship Diagram (ER Diagram) for the application. In addition, you will transform the ER Diagram into a relational schema. In the next deliverables, you will create a simple UI that is connected to the back-end (i.e., database). Furthermore, you will add support to run some specific queries from the UI.

For the ER Diagram (and for the whole development), we will provide you the requirement analysis. You need to convert the English description provided below into an ER Diagram.

We recommend that you start as early as possible on this project.

1 Application Specifications

An infotainment startup plans to create a website that will allow its users to view details of various motion pictures. Registered users will be able to view the list of all movies, search movies by name, genre, actor etc. Besides users will be able to 'like' movies. The detailed requirements are listed below:

1. Each motion picture is identified by an id. The database must also store the motion picture's name, genre, production, release date, budget, and ratings. A motion picture can belong to multiple genres, and each genre has a genre id and description of the genre. Ratings are floating values between 0 and 10.
2. Motion pictures can be both Movies and TV series. For TV series, they need to store the number of seasons; for movies, they need to store the box office collection.
3. The database should also contain information about people (id, name, nationality, date of birth, gender) who play a role in any motion picture. Roles can be actor, director, producer, screenwriter etc. Keep in mind that a person can have multiple roles in the same movie.
4. The database should also keep the information of the awards (award name and year received) each person has received for a motion picture. Keep in mind that they are only interested about the individual awards that are specific to people (best actor, best director, best supporting role, etc.) for a motion picture. You do not have to consider the awards that are only specific for motion pictures (e.g., best movie, best cinematography, etc.).
5. To provide better trivia for the users, they need to store the shooting location (name, city, country) for each motion picture. Keep in mind that a movie can have multiple shooting locations.
6. The database needs to keep basic information about the registered users (id, email, name, and age) of the website.
7. Registered users can 'like' motion pictures.

2 Your Task: Part 1

(a) Draw an ER Diagram that captures the preceding information identifying the primary keys, candidate keys, weak entities (if any), partial keys (if any), total participation (if any) and any key constraints. State any assumptions you made during your design.

(b) Turn the ER Diagram into tables (relational model schema). Provide the SQL `CREATE TABLE` statement for each table in the relational schema.

Part 2 and Part 3 contain the database creation, UI design, database connection, running queries from the UI, and adding other functionalities (i.e., registered user, 'like' etc.). We will publish the details soon.

3 Logistics

3.1 Collaboration

This is to be a group project with maximum size of 2.

3.2 Submitting your assignment

Please submit as pdf on Gradescope. Also make sure to submit as group submission. The due date for this first part (PA 1.1) is Thursday 8th February, 2024 at 23:59.