CSCI 327 Spring 2025 - Introduction to Databases

GROUP PROJECT

Purpose of this project

Analyze, design, implement, and document a database system application. You will use the methodology for database development learned in class. The system must be implemented on a DBMS with PHP as a host-language for the application. The system must be menu-driven and include the basic functionality described below. **Each group must have THREE members**.

THE VIDEO STORE

The following specifications are intended as a guide; they are not the complete specifications. These are intended to be a basis for you to get started in the right direction in designing your system. You as the designer must analyze and decide what other details or features should be specified for your system. Thus, individual group implementations will differ in terms of design and implementation styles. Every group has to mention clearly in its report what other specifications are assumed.

Data and Functional Requirements

VideoStore is the leading corporation in the video rental business (in some universe where streaming hasn't been invented yet). A requirement analysis that was conducted has identified a number of specifications about the operations and goals of VideoStore. The following lists the major requirements for the VideoStore enterprise. VideoStore has a large number of stores and prides itself on having the most comprehensive list of video movies. It also rents players to its members. Movies are held by VideoStore in both DVD and Blu-Ray disk formats (because VHS is obsolete even for this universe). A member is allowed to rent up to 10 BDs/DVDs and 1 player. Movies can be returned to any store, but a player must be returned to the store from which it was borrowed. Members have access to an online catalogue of titles and may reserve titles. Items are charged per day. A discount of 10% is awarded on weekday rentals for all items rented. The catalogue of movies contains the title of the movie, the studio or producer, the director, two lead actors, the genre of the movie, the number of BDs and DVDs, and charge per day. VideoStore carries multiple copies of the same title, and a store could have been assigned any number of copies of each title. A store that has more copies of a title than assigned to it will return these at the end of each week to the VideoStore head office, which redistributes them to appropriate stores.

Note thata number of actions or property values need not be directly represented on the E/R diagram. However, we need to represent the data that will allow us to support the actions and compute the values for the properties. For instance, we do not need to represent the concept of catalogue. It suffices the represent the data we need for the catalogue.

There are a number of processes that are relevant: Querying, Updating, Reporting.

You can make further assumptions but: (a) they have to be reasonable, (b) they should not be in contradiction with the assumptions described above, and (c) they have to be clearly stated in your report.