



# GEN BUS 760

## Homework 3 — *Fall 2021*

**A film Rental Company would like you to design a database to help them manage their business. Based on the description of their operations provided below create an ER Diagram and map your model into a relational schema. Only certain attributes are provided. You need to decide what other attributes are appropriate and include them in your schema. Your ER Diagram, however, should not have any attributes. Remember to underline primary keys and identify each foreign with the '@' sign in the table schema. [25 points]**

A movie Rental Company rents DVDs from several locations (i.e., stores). The company keeps some basic information on their stores & employees. The information for each employee includes the employee's name, email, position, salary, etc. More specific information is kept for certain types of employees. For managers, the company needs to track the most recent date that they completed a management improvement course. For sales representatives, the company needs to hold their previous month's sales amounts and their bonus levels to be used for a bonus pay system. Each store has one manager who is responsible for the store's operations. The information for each store includes the store name and its address.

The rental company maintains general information about movies. They store the movie title, year that it was released, its rating (i.e. G, PG, PG-13, etc.), length (in minutes), and the main genre of the film (i.e. drama, comedy, etc.). Each movie is identified by a catalog number and refers to several items in inventory (this includes each physical copy of the films' DVDs owned by the company).

When DVDs are delivered to a store, the store creates an entry in its DVD inventory. Each physical copy of a movie (i.e., an inventory item) is identified by its own unique number that is different from the movie catalog number. For each DVD available for rent, we need to store the date it became available in the store, number of discs in the "package", whether the film is in widescreen or standard format and film's rental price. Any other general characteristic is stored separately in a "movie" table.

The rental company maintains a list of members (customers who rent films). Each member signs up at a particular store. It is important to track at which store the member signed up initially, even though they may rent from any location. The store keeps the following customer information: name, phone number, address, birth date, date when the customer signed up at the store, and the sales representative who process the registration.

A member may rent many DVDs over time. However, a member may rent no more than seven DVDs at one time. For each DVD rented (i.e., each rental item), the company keeps the date of the rental, the date the DVD is due to be returned (typically the due day is two weeks after the day the film was rented, but that date may be extended by the sales representative for specific requests), the date it is actually returned, and the ID of the assisting sales representative. For each rental, we maintain the information on the customer's credit card used (card number and type).