CS 2441. Schema Design: Functional Dependencies

List the attributes needed for the video store application, described below, and list the functional dependencies among these attributes.

Consider the operations of a video rental and sales chain. Such a company purchases videos from vendors and stocks them in one of many stores. Each store has several employees who rent out or sell these movies to members. Members are required to return the rented movies by the due date; otherwise, a fine is imposed. Commissions are awarded to employees based on their sales volume.

- Each store is identified by a unique store number and is located at some address. For example, the information (2, 801 22\textsuperscript{nd} st Washington DC) denotes that store number 2 is located at 801 22\textsuperscript{nd} St Washington DC.
- Employees are assigned a unique ID (call it EID) and we need to store their name, addresses, the store they are assigned to, and their commission rate (each employee could have different commission rates). They must be assigned to a store.
- Members of the store are also assigned a unique membership number (call it MID) and their personal information such as last name, first name, address, and telephone number needs to be stored in the database.
- Vendors have a unique name (i.e., the vendor name) and are located at some address and we need to store their phone number.
- Movies (i.e., the video) are identified uniquely by a video ID number (call it VID). We need to store the title of the movie, the stock number which will indicate the store which has the video (this could be same as store number or you can use another name/attribute), the cost (i.e., amount the store paid for it), the rental price (assume this is the cost of daily rental), the sale price (if a member wishes to purchase the video), the date when the video was purchased by the store, the category (for example comedy or drama etc.), and the vendor from whom the store purchases the video.
- A Rental must record each rental transaction made; i.e., the video, the member renting the video, the employee handling the transaction (since commissions will be based on number of transactions the employee had), the stock number, the date rented, the due date. Since a member can rent the same video multiple times, it is desirable to associate a unique transaction number with each rental.
- A Sales must record similar information as you did with rentals.