Tutorial 2: Logical Database Design

Case Study: Mapping an Entity-Relationship Diagram to the Relational Model

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Here are the tables determined so far:

1. Customer (dlicense, phone, name, addr)
   Primary key: dlicense
   Alternate key: (phone, name)
   Note: After discussions with the company, we realized that they also identify each customer by their phone number and name (taken together). So, we state that as an alternate key for this table. An alternate key is any candidate key other than the primary key.

2. ClubMember (dlicense, points, fees)
   Primary key: dlicense
   Foreign key: dlicense references Customer

3. Branch (location, city)
   Primary key: location, city

4. VehicleType (vtname, features, wrate, drate, hrate, krate, wirate, dirate, hirate)
   Primary key: vtname

5. Vehicle (vlicense, initprice, odometer, year, status, forRentFlag,
   Primary key: vlicense
   Comments: We decided to use a forRentFlag to tell if a vehicle is available for renting. Do we need any other table for the vehicles?
   Foreign key(s):
   Add the rest of the attributes. List the foreign key(s).

6. Reservation (confNo, fromDate, fromTime, toDate, toTime,
   Primary key: confNo
   Foreign key(s):
   Add the rest of the attributes. List the foreign key(s).

7. RentalAgreement (rentId, cardNo, expDate, odometer, rentedfromDate, rentedfromTime, rentedtoDate, rentedtoTime,
   Primary key: rentId
   Foreign key(s):
   Comments: Note that Return is included in RentalAgreement as each rental agreement eventually will have a single return. There is no point in making Return a separate table.
   Add the rest of the attributes. List the foreign key(s).

8. TimePeriod (fromDate, fromTime, toDate, toTime)
   Primary key : (fromDate, fromTime, toDate, toTime)

Lastly, list any additional tables, their primary key(s), and their foreign key(s):

1. asdf