Tutorial 2: Logical Database Design

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

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January 2018

Here are the tables determined so far:

1. Customer (dlicense, phone, name, addr)
   Primary key: dlicense
   Alternate key: (phone, name)

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, make, model, year, color, odometer, status, forRentFlag, location, city, vtname)
   Primary key: vlicense
   Foreign key(s): (location, city) references Branch, vtname references VehicleType

6. Reservation (confNo, fromDate, fromTime, toDate, toTime, dlicense, vtname, location, city)
   Primary key: confNo
   Foreign key(s): dlicense references Cusomter, vtname references VehicleType, (location, city) references Branch, (fromDate, fromTime, toDate, toTime) references TimePeriod

7. RentalAgreement (rentId, cardNo, expDate, odometer, rentedfromDate, rentedfromTime, rentedtoDate, rentedtoTime, vlicense, dlicense, confNo, returnCost, returnTime, returnDate, returnFulltank, returnOdometer)
   Primary key: rentId

Foreign key(s): vlicense references VehicleForRent, dlicense references Customer, (rentedfromDate, rentedfromTime, rentedtoDate, rentedtoTime) references TimePeriod, confNo references Reservation

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. VehicleForSale (vlicense, saleDate, price, agent)
   Primary Key: vlicense