
OpenCourseWare

Database

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Exercise 2 solution (Topic Relational Model (2.1))



- CAR DEALER

Design a database about car dealers.

A dealer can sell various brands of cars (for example, Audi and Volkswagen). The following information needs to be stored regarding the cars: brand, model, price, discount (if appropriate) and technical data (fiscal power, displacement, etc.).

For each car model, you will need to know the characteristics of its standard equipment (for example: driver airbag and central locking), as well as the extras that can be included (air conditioning, passenger airbag, metallic paint, etc.) and the price for each item.

Note that what is considered the standard equipment for some models are extras for other models. For example, there are models that include airbags as a standard feature while others offer them as possible extras.

The dealer always has cars of several models in stock (each one is identified by its chassis number). These can be found in the same place, or in any of the brand's official retail services. An official service is also an automobile shop, but it depends on a dealer who lends it the cars for to display and also sells them. For each official service, the name, address and CIF (Company Tax Code) are known.

When a car is sold, we want to know who it has been sold by, which can be one of the vendors of the dealer or an official service. The personal data (name, NIF (Tax Identification Code), address, etc.) and the sales made by the vendors are stored.

We also want to know the price that has been charged for the car and the means of payment: cash or financing. Information about the extras that have been included must also be saved.

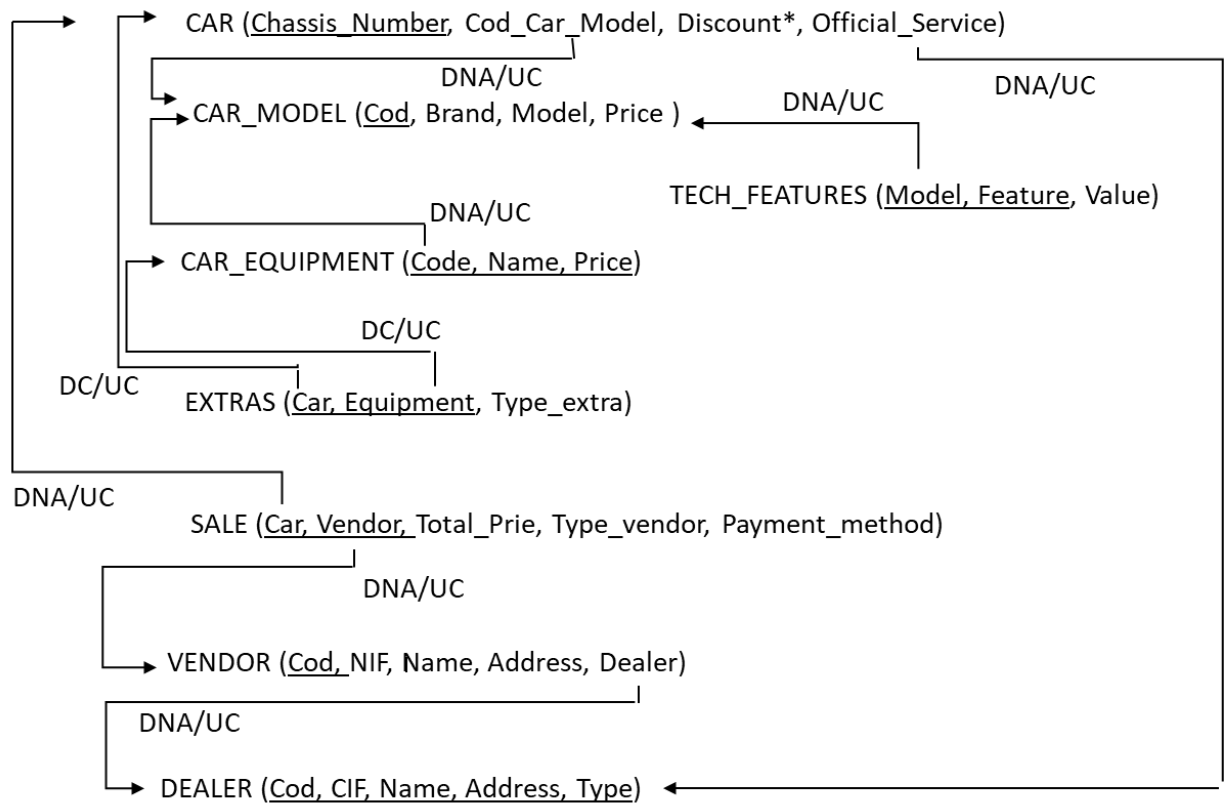
You must:

- Obtain the relational schema/diagram according to requirements with the primary and alternative keys. Indicate the foreign keys with their delete and update options.
- Write additional semantic assumptions to the statement, if needed
- Write additional semantic assumptions to the scheme, if needed

SOLUTION

Partial solution, some semantic assumptions are missing.

A possible solution is:



ASSUMPTIONS

Semantic assumptions to the statement

- The location of the car is given by the official service
- The feature attribute in Tech Features table contains the name of the technical specification (e.g. fiscal power) and the Value attribute contains the value for that technical specification (e.g. 90 HP)

Semantic assumptions to the schema

- The total price must be equal to the price of the car plus the price of the extras

Domains

- Type_Extra: {standard equipment, extra}
- Type_Vendor: {official service, vendor}
- Payment_Method: {cash, financing}