

第七章作业答案

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20. Consider the E-R diagram in Figure 7.29, which models an online bookstore.

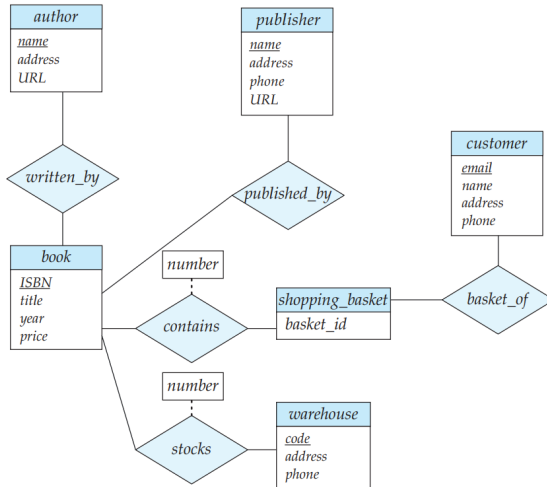


Figure 7.29 E-R diagram for Exercise 7.20.

a. List the entity sets and their primary keys.

author(*name*, *address*, *URL*)

publisher(*name*, *address*, *phone*, *URL*)

book(*ISBN*, *title*, *year*, *price*)

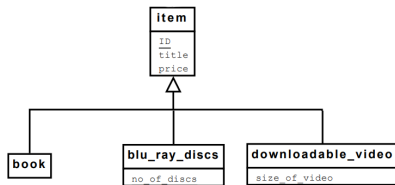
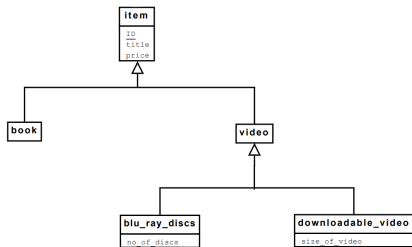
customer(*email*, *name*, *address*, *phone*)

shopping_basket(*basket_id*)

warehouse(*code*, *address*, *phone*)

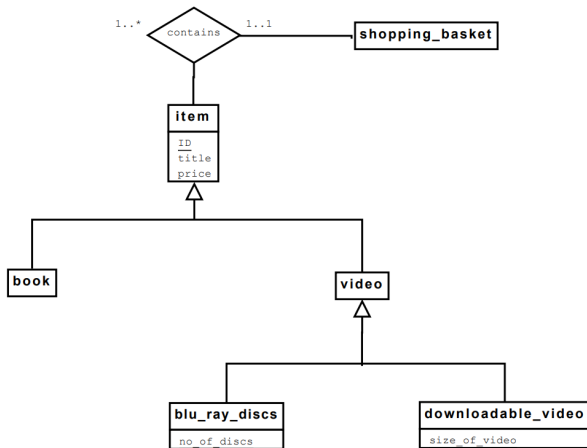
b. Suppose the bookstore adds Blu-ray discs and downloadable video to its collection. The same item may be present in one or both formats, with differing prices. Extend the E-R diagram to model this addition, ignoring the effect on shopping baskets.

就是除了book之外，还要增加Blu-ray discs和downloadable video这两种形式的商品，可以将这三种形式的商品都泛化成item。以下是可能的答案：



c. Now extend the E-R diagram, using generalization, to model the case where a shopping basket may contain any combination of books, Blu-ray discs, or downloadable video.

将b的图加入到图7.29中。比如：



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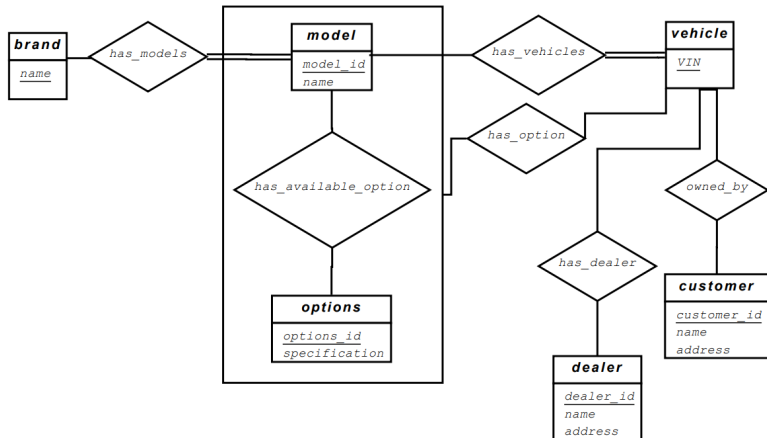
21.Design a database for an automobile company to provide to its dealers to assist them in maintaining customer records and dealer inventory and to assist sales staff in ordering cars.

Each vehicle is identified by a vehicle identification number (VIN). Each individual vehicle is a particular model of a particular brand offered by the company (e.g., the XF is a model of the car brand Jaguar of Tata Motors). Each model can be offered with a variety of options, but an individual car may have only some (or none) of the available options. The database needs to store information about **models, brands, and options**, as well as information about individual **dealers, customers, and cars**.

Your design should include an E-R diagram, a set of relational schemas, and a list of constraints, including primary-key and foreign-key constraints.

应包括题目所述的models, brands, options, dealers, customers, and cars实体, 以下是参考答案:

E-R图:



关系模式与约束：

brand(name);

model(model_id,name);

vehicle(VIN);

option(option_id,specification);

customer(customer_id,name,address);

dealer(dealer_id,name,address);

has_models(name,model_id ,foreign key name references brand ,foreign key model_id references model);

has_vehicles(model_id,VIN,foreign key VIN references vehicle,foreign key model_id references model);

available_options(model_id,option_id,foreign key option_id references option,foreign key model_id references model);

has_options(VIN,model_id,option_id,foreign key VIN references vehicle,foreign key (model_id, option_id) references available_options);

has_dealer(VIN,dealer_id ,foreign key dealer_id references dealer,foreign key VIN references vehicle);

owned_by(VIN,customer_id,foreign key customer id references customer,foreign key VIN references vehicle)