

# Database Design

## 5-1: Relationship Transferability

### Practice Solutions

#### Vocabulary

Directions: Identify the vocabulary word for each definition below.

Transferable	Description of a relationship where an instance of A is related to an instance of B, and the association can be moved to another instance of B
Nontransferable	Description of a relationship where an instance of A is related to an instance of B, and the association cannot be moved to another instance of B

#### Try It / Solve It

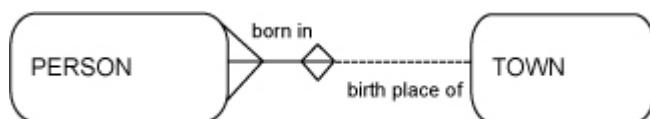
1. Draw ERDs for each of the following. Draw softboxes, relationship lines, and labels for each relationship in both directions. Indicate non-transferability when appropriate.

#### Solution:

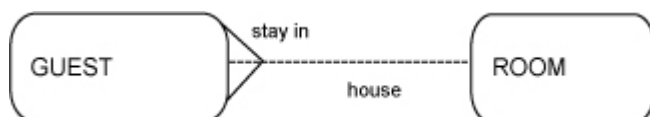
Some of the 1:M relationships could easily be M:M when modeled over time (such as ROOM and GUEST, HOTEL and GUEST, EMPLOYEE and DEPARTMENT).

If someone points that out, tell them that we are looking at a single point in time right now, but we will tackle the time element very soon

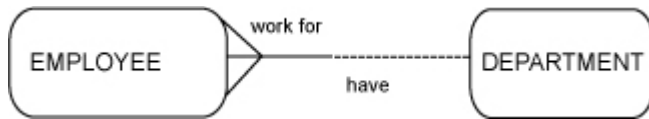
- a. Each town may be the birthplace of one or more people. Each person must be born in one and only one town.



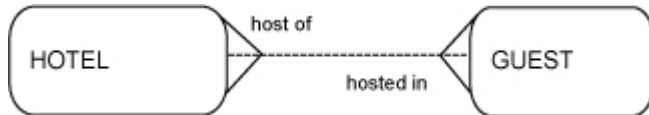
- b. Each room may house one or more guests. Each guest may stay in one and only one room.



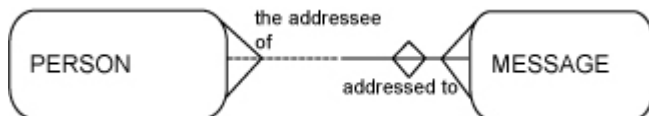
- c. Each employee must work for one and only one department. Each department may have one or more employees.



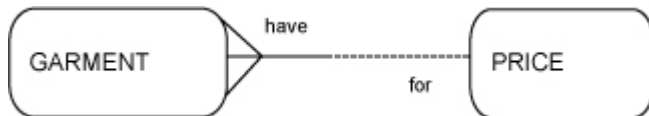
- d. Each hotel may be the host of one or more guests. Each guest may be hosted in one or more hotels.



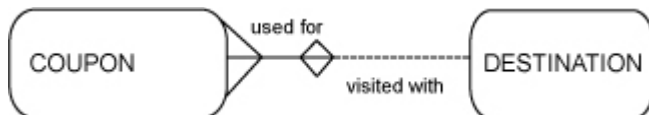
- e. Each message must be addressed to one or more persons. Each person may be the addressee of one or more messages.



- f. Each garment must have one and only one price. Each price may be for one or more garments.



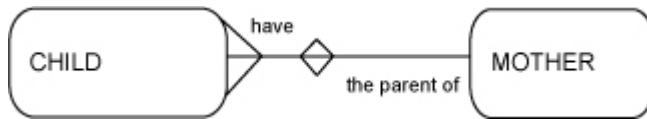
- g. Each airline coupon must be used for one and only one destination. Each destination may be visited with one or more coupons.



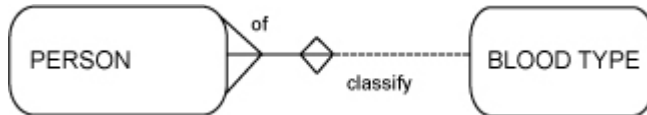
- h. Each automobile must use one and only one tire size. Each tire size may be used by one or more automobiles.



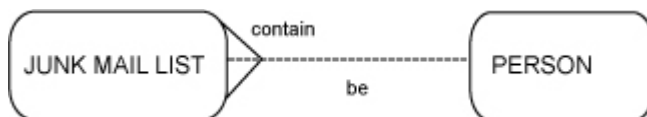
- i. Each child must have one and only one biological mother. Each mother must be the parent of one or more children.



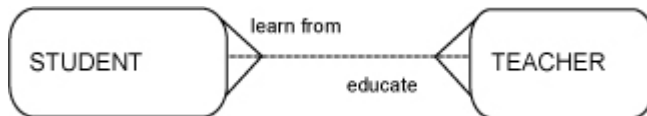
- j. Each person must be of one and only one blood type. Each blood type may classify one or more persons.



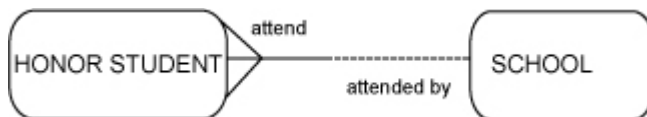
- k. A person may be on one or more junk-mail lists. Each junk list may contain one or more persons.



- l. Each student may learn from one or more teachers. Each teacher may educate one or more students.



- m. Each school may be attended by one or more honor students. Each honor student must attend one and only one school.



- n. Each fingerprint must belong to one and only one person. Each person must have one and only one fingerprint.

