Database Design
4-2: Documenting Business Rules
Practice Solutions
Vocabulary

Directions: Identify the vocabulary word for each definition below.

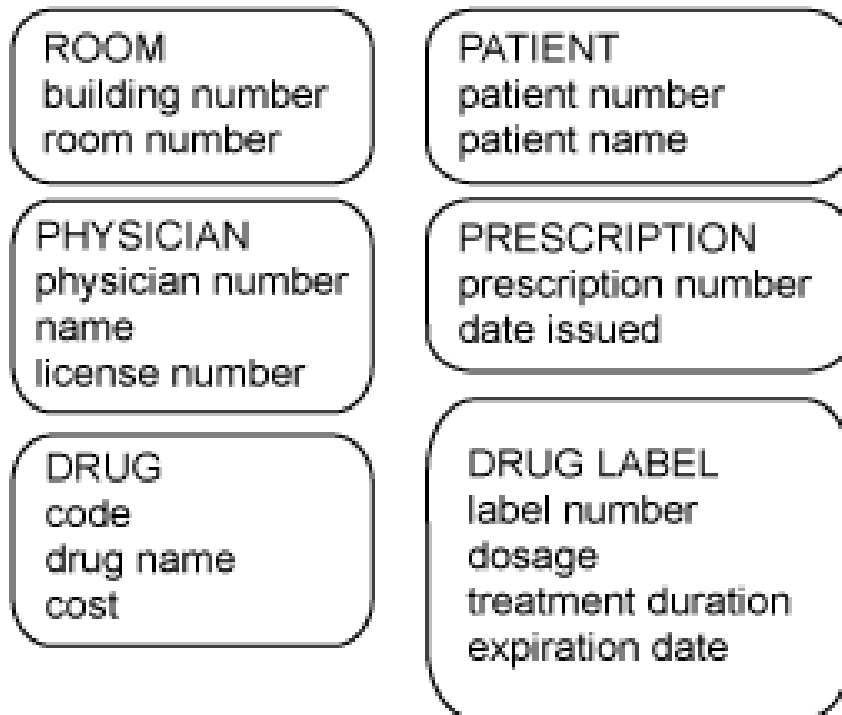|	
Structural business rule	A type of business rule that indicates the types of information to be stored and how the information elements interrelate.
Business rule	A formalized statement of the usual, customary, or generalized course of action or behavior for a business.
Procedural business rule	A type of business rule that is workflow or business process related. (e.g., A has to happen before B, and then C has to happen at the same time as D.) This is also called a process business rule.

Try It / Solve It

1. Members of your design team have been working with the local hospital to develop a data model for their need to store information about patients, the patient's room number, the patient's doctor, drug prescriptions given, and specific drug information.

    However, they all went on vacation and left you to figure out the model. They also failed to give you any of their documentation other than the entities and attributes illustrated here. Instead of going back to the hospital, which could reflect poorly on your company, you're going to have to think about everything you know about hospitals!

    Your task is to generate a list of business rules you think were used to arrive at the information shown here. Use your imagination. List 10 structural rules, 5 procedural rules, and 2 programmatic rules (rules to be addressed by computer applications in the future). State each rule as a single sentence.

    Based on your set of business rules, draw the ERD.

```
ROOM
building number
room number
```

```
PATIENT
patient number
patient name
```

```
PHYSICIAN
physician number
name
license number
```

```
PRESCRIPTION
prescription number
date issued
```

```
DRUG
code
drug name
cost
```

```
DRUG LABEL
label number
dosage
treatment duration
expiration date
```

Solution—Answers Will Vary:

- **Structural Rules:**
  A patient is someone who is admitted to the hospital.
  Each room assignment must include the building number and room number.
  Each room may be occupied by one or more patients.
  A physician must have a valid license number.
  Each drug must be prescribed by a physician.
  Each drug prescribed must have a label showing label number, dosage, treatment duration, and expiration date.
  The drug code, name, and cost must be recorded for all drugs.
  Each prescription must have a number and date. Each physician may be assigned to more than one patient. Each patient must have an assigned physician.

- **Procedural Rules:**
  Changes to prescriptions can be made only by licensed physicians.
  Patients cannot refill prescriptions without a physician's signature.
  Physicians cannot remove drug labels.
  Patients cannot change hospital rooms without a physician's recommendation.
  Nurses cannot reassign patients without physician approval.

- **Programming Rules**:
  Drugs costs are billed at current cost at the time of patient discharge.
  Physician fees may reflect additional costs associated with patient complications, additional patient requests, etc.

ROOM
building number
room number

occupied by

the occupant

PATIENT
patient number
* patient name

have

assigned to

PHYSICIAN
physician number
* name
* license number

written

written for

DRUG LABEL
label number
* dosage
* treatment duration
* expiration date

for

have

DRUG
code
* drug name
* cost

Included in

Include

PRESCRIPTION
prescription number
date issued