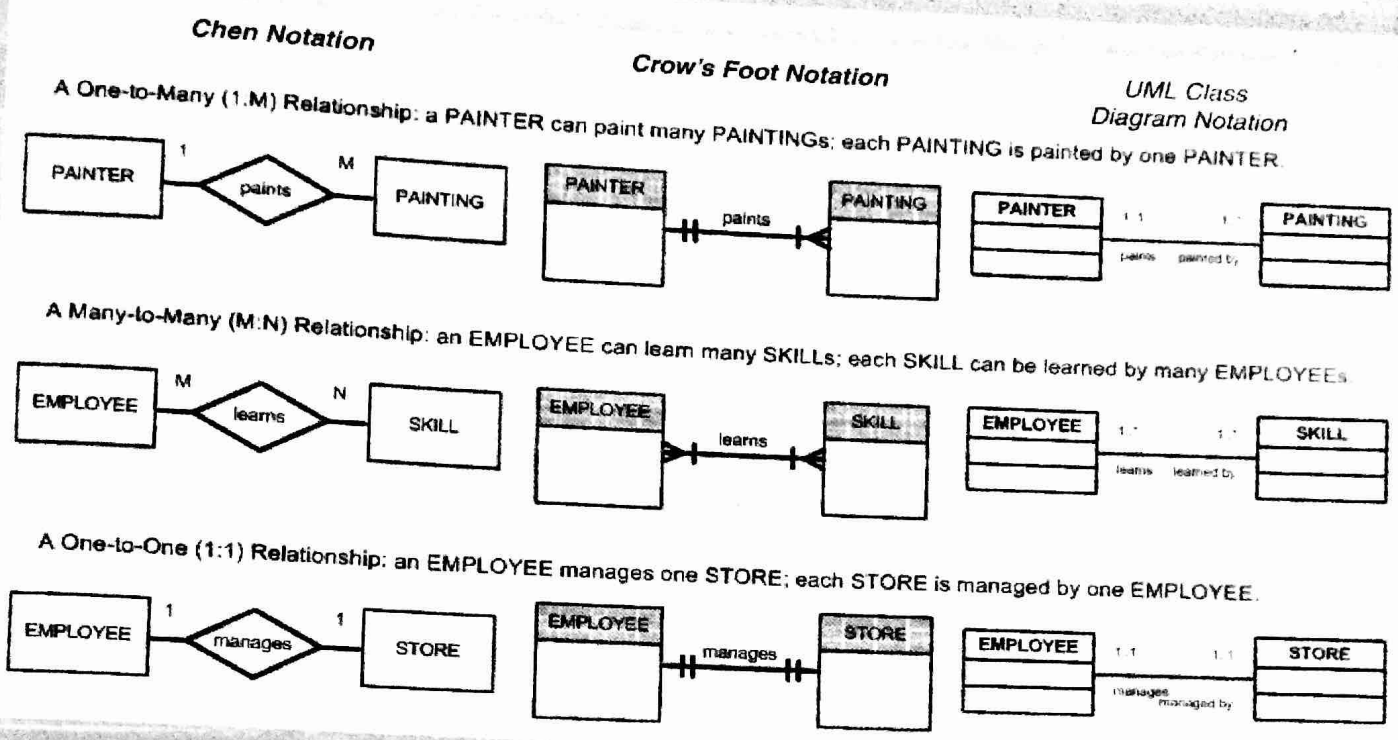
FIGURE 2.3 The ER model notations



The left side of the ER diagram shows the Chen notation, based on Peter Chen's landmark paper. In this notation, the connectivities are written next to each entity box. Relationships are represented by a diamond connected to the related entities through a relationship line. The relationship name is written inside the diamond.

The middle of Figure 2.3 illustrates the Crow's Foot notation. The name *Crow's Foot* is derived from the three-pronged symbol used to represent the "many" side of the relationship. As you examine the basic Crow's Foot ERD in Figure 2.3, note that the connectivities are represented by symbols. For example, the "1" is represented by a short line segment, and the "M" is represented by the three-pronged "crow's foot." In this example, the relationship name is written above the relationship line.

The right side of Figure 2.3 shows the UML notation (also known as the UML class notation). Note that the connectivities are represented by lines with symbols (1..1, 1..*). Also, the UML notation uses names in both sides of the relationship. For example, to read the relationship between PAINTER and PAINTING, note the following:

- A PAINTER "paints" one to many PAINTINGs, as indicated by the 1..* symbol.
- A PAINTING is "painted by" one and only one PAINTER, as indicated by the 1..1 symbol.

NOTE

Many-to-many (M:N) relationships exist at a conceptual level, and you should know how to recognize them. However, you will learn in Chapter 3 that M:N relationships are not appropriate in a relational model. For that reason, Microsoft Visio does not support the M:N relationship directly. Therefore, to illustrate the existence of an M:N relationship using Visio, you have to change the line style of the connector (see Appendix A, Designing Databases with Visio Professional: A Tutorial, at *www.cengagebrain.com*).

In Figure 2.3, entities and relationships are shown in a horizontal format, but they may also be oriented vertically. The entity location and the order in which the entities are presented are immaterial; just remember to read a 1:M relationship from the "1" side to the "M" side.