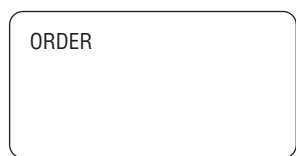
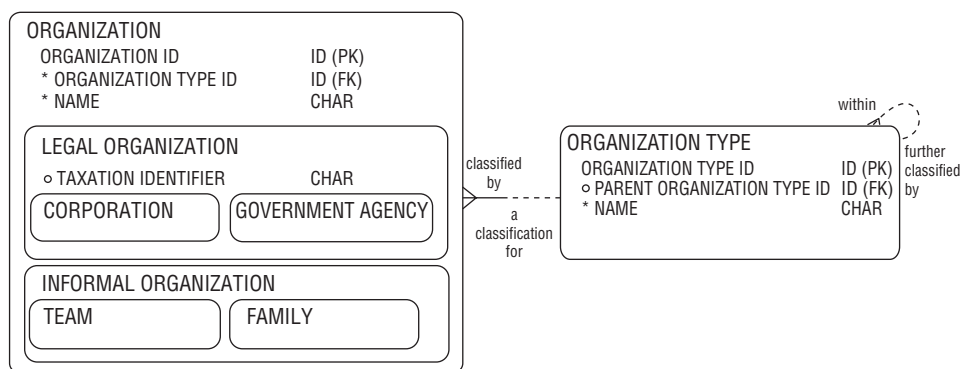


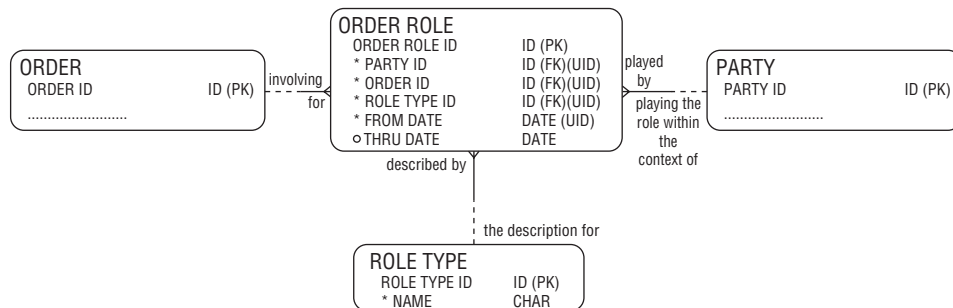
**Figure 1-1** Levels of generalization



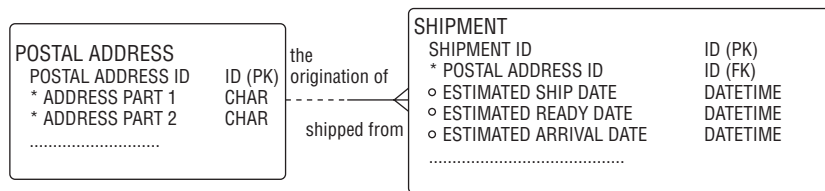
**Figure 1-2** An entity



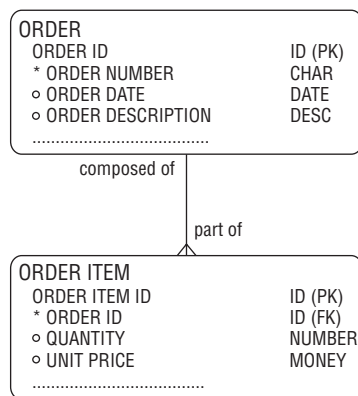
**Figure 1-3** Subtypes and supertypes



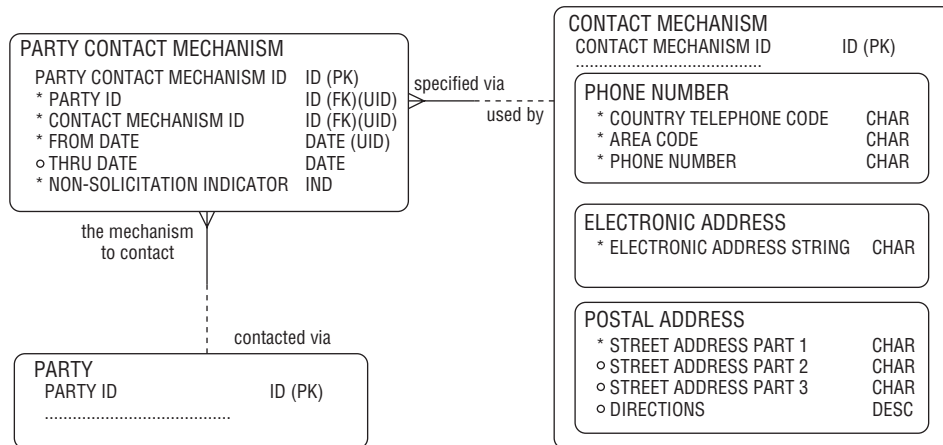
**Figure 1-4** Attributes, relationships, and keys



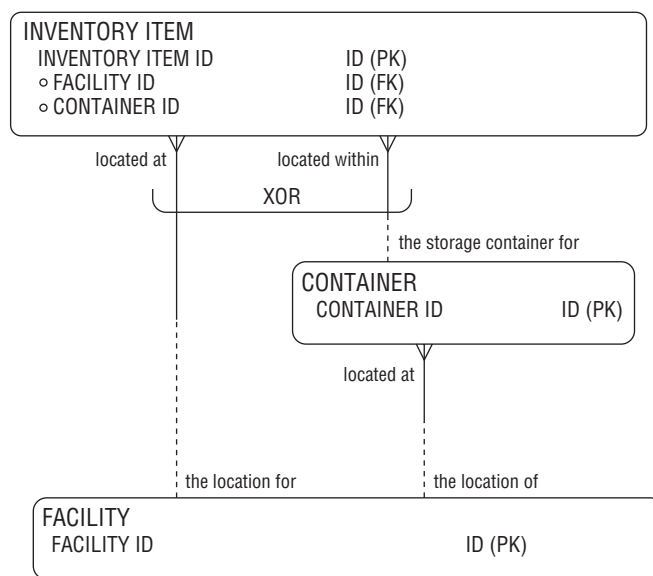
**Figure 1-5** Mandatory versus optional relationships



**Figure 1-6** One-to-many relationship

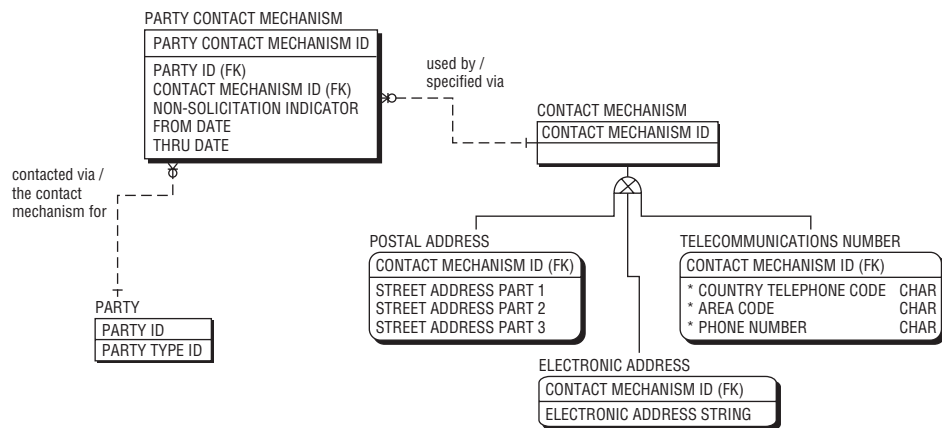


**Figure 1-7** Many-to-many relationships resolved by an associative entity

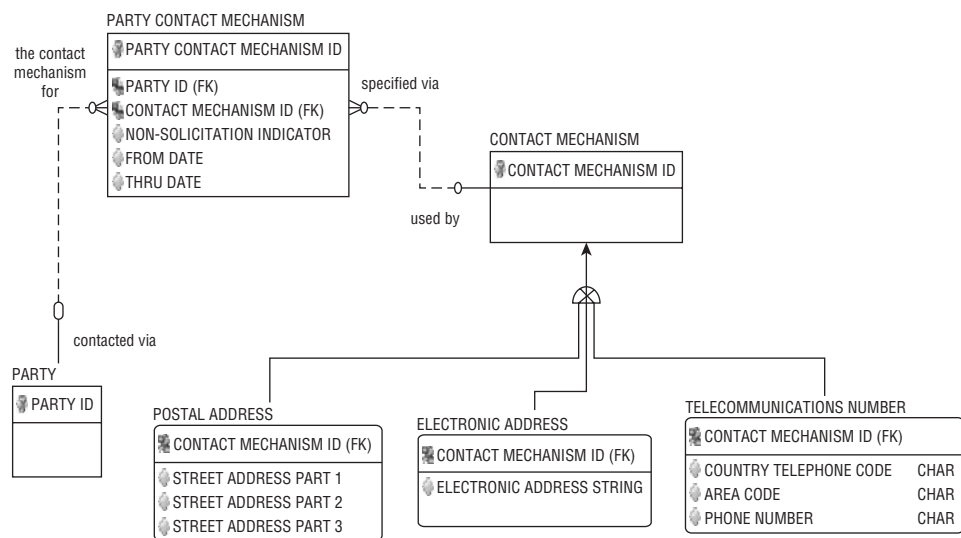


**Figure 1-8** Exclusive Arcs

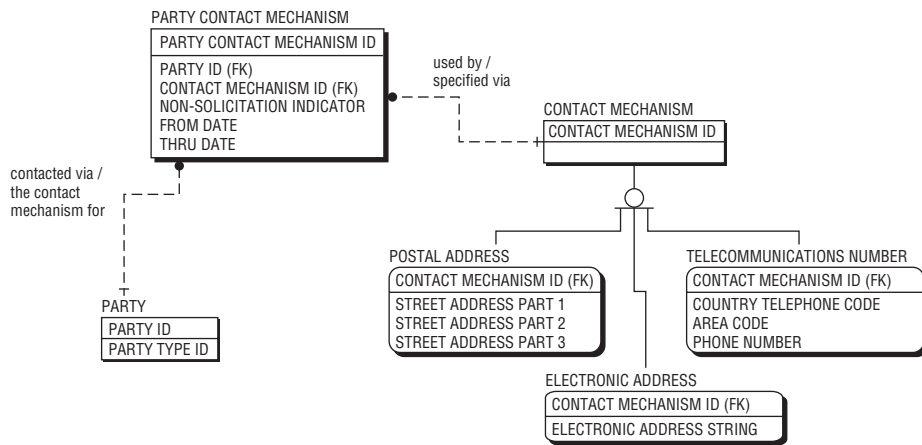




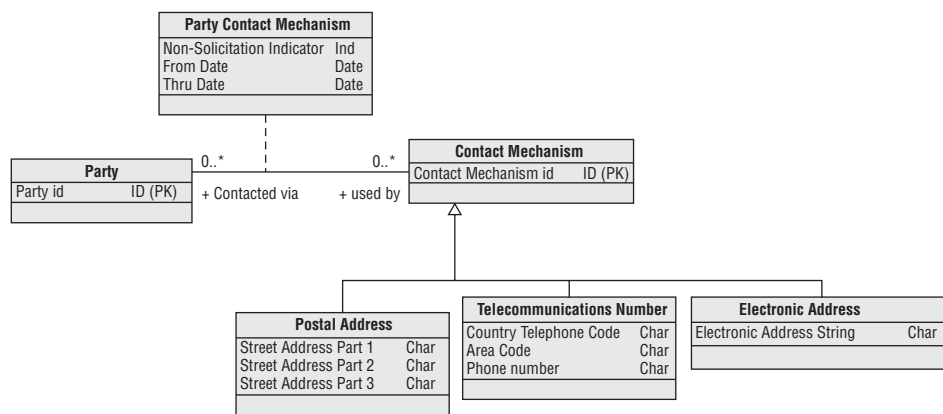
**Figure 1-9** Contact Mechanism Pattern in ERwin from Computer Associates



**Figure 1-10** Contact Mechanism Pattern in ER/Studio from Embarcadero



**Figure 1-11** Contact Mechanism Pattern shown using IDEF1X notation



**Figure 1-12** Contact Mechanism Pattern shown using UML