

TABLE 2.1 Summary of the Basic ER Modeling Concepts



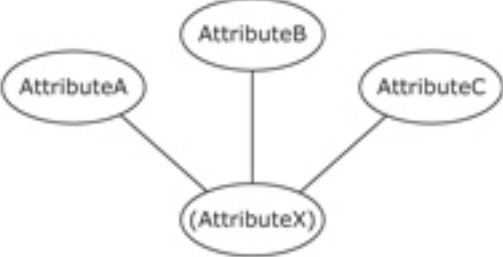
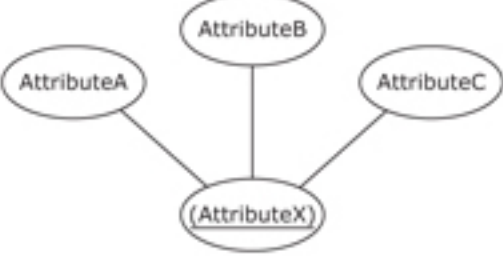

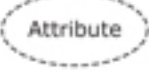

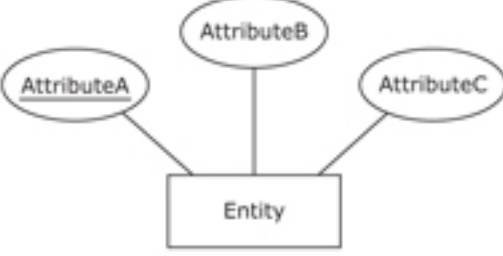
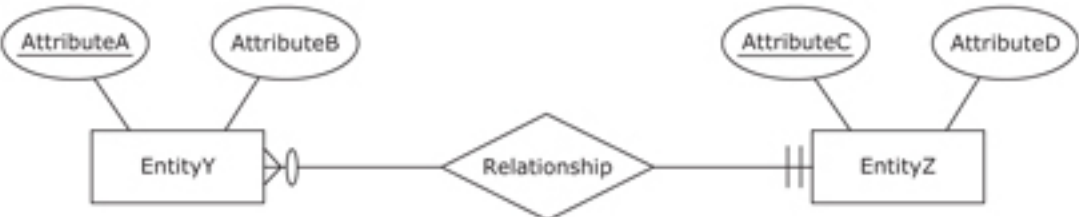
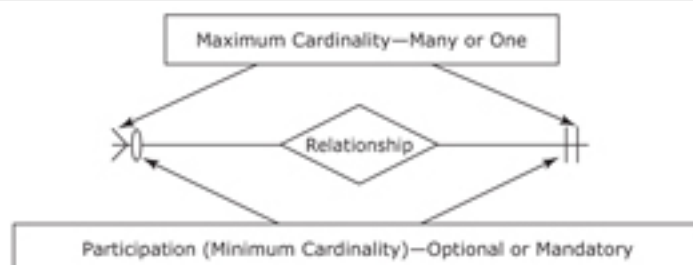
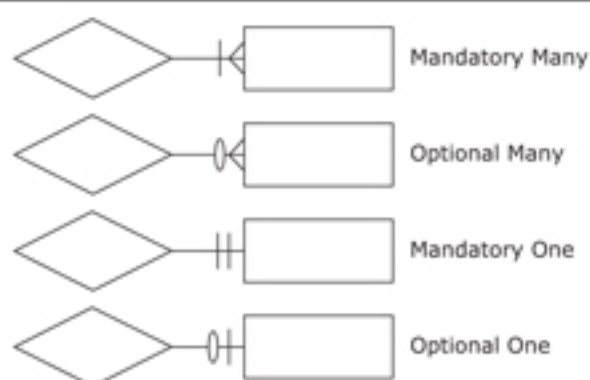
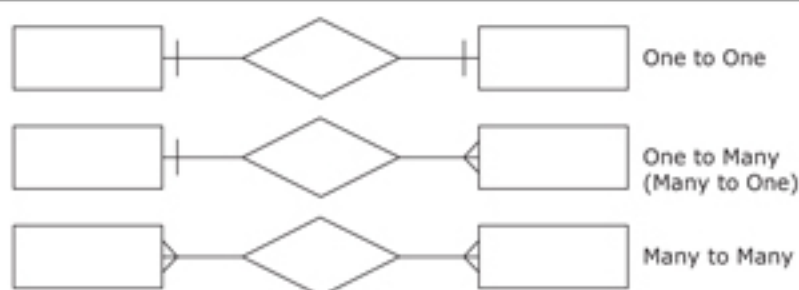
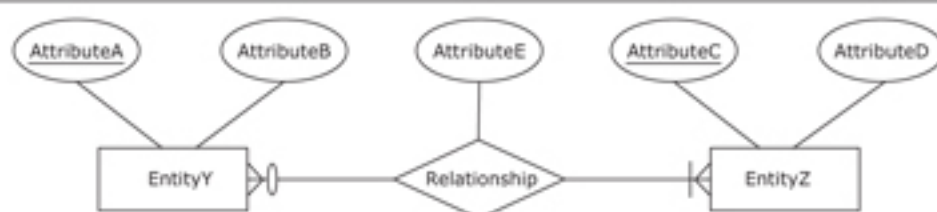
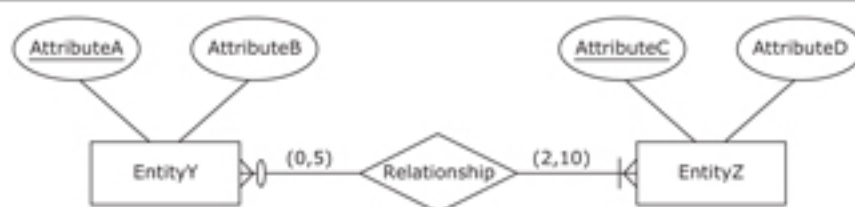
Concept	Graphical Presentation
Regular Attribute	
Unique Attribute	
Composite Attribute	
Composite Unique Attribute	
Multivalued Attribute	
Derived Attribute	
Optional Attribute	
Entity with Attributes Notes: Each entity must have at least one unique attribute. Within one entity, each attribute name is different. Within one ER diagram, each entity name is different	
Relationship	

TABLE 2.1 Summary of the Basic ER Modeling Concepts (*Continued*)**Concept****Graphical Presentation****Cardinality Constraints****Four Possible Cardinality Constraints****Three Types of Relationships (Maximum Cardinality-Wise)****Relationship with an Attribute**

Note: Applicable for many-to-many relationships

**Relationship with Specific Minimum and Maximum Cardinalities****Unary Relationship**

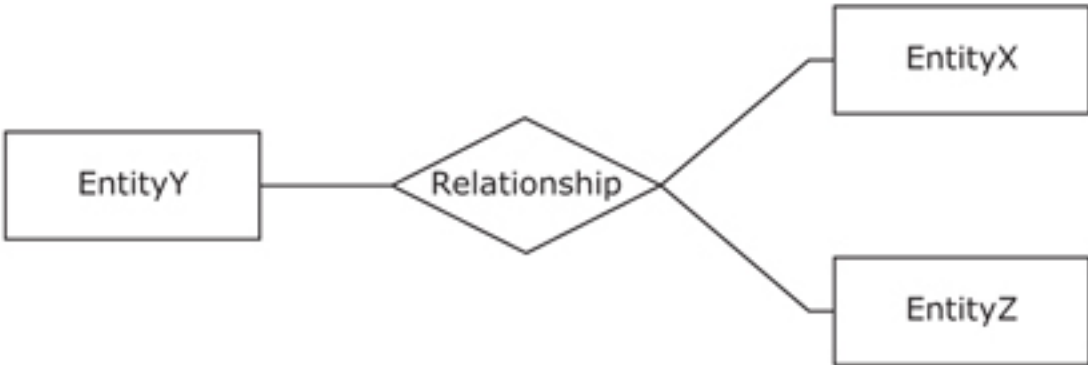
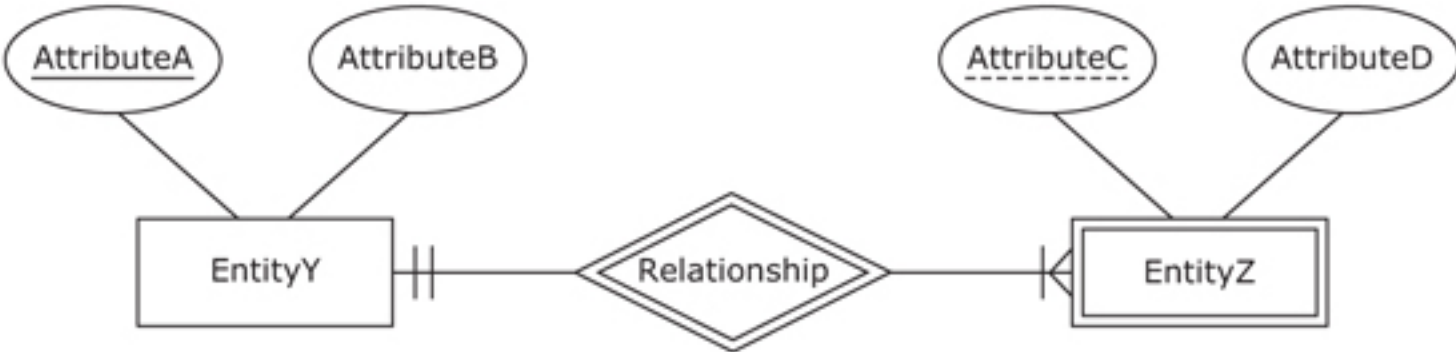
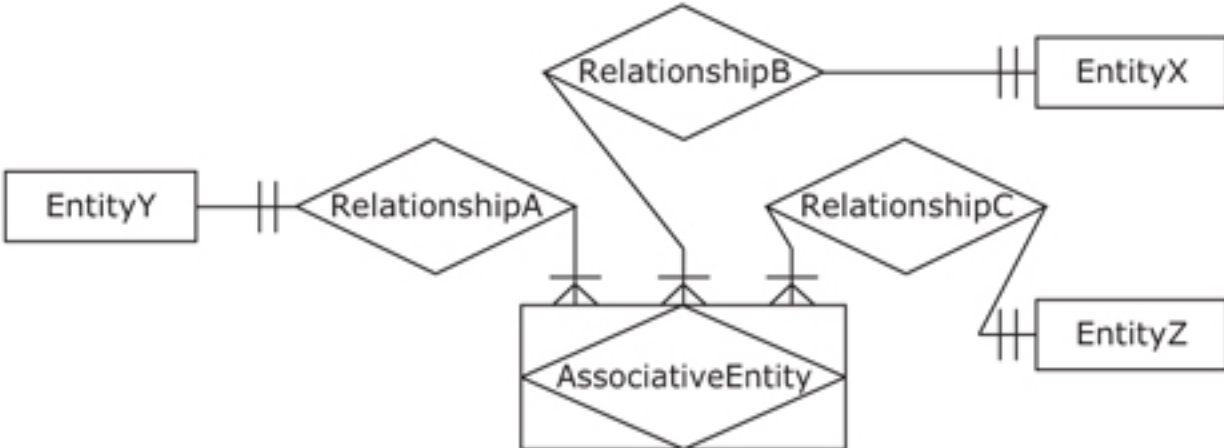
Degree of a Relationship: 1 (one entity involved)

**Binary Relationship**

Degree of a Relationship: 2 (two entities involved)



TABLE 2.1 Summary of the Basic ER Modeling Concepts (*Continued*)

Concept	Graphical Presentation
Ternary Relationship Degree of a Relationship: 3 (three entities involved) Notes: Mostly applicable as many-to-many relationships. Ternary relationships are rare (relationships of a degree higher than 3 are even rarer).	 <p>The diagram shows a central diamond labeled 'Relationship'. Three lines connect it to three rectangular entities: 'EntityY' on the left, 'EntityX' at the top right, and 'EntityZ' at the bottom right.</p>
Weak Entity Notes: Always associated with its owner via an identifying relationship (which is either 1:M or 1:1). If identifying relationship is 1:M, then weak entity must have a partially unique attribute.	 <p>The diagram shows two entities, 'EntityY' and 'EntityZ', connected by a double-lined diamond labeled 'Relationship'. 'EntityY' has two attributes: 'AttributeA' (underlined) and 'AttributeB'. 'EntityZ' has two attributes: 'AttributeC' (dashed underline) and 'AttributeD'. The relationship line has a double vertical bar at 'EntityY' and a double vertical bar with a crow's foot symbol at 'EntityZ'.</p>
Associative Entity Note: Alternative method for depicting M:N relationships; particularly useful for depicting ternary relationships.	 <p>The diagram shows an 'AssociativeEntity' represented by a rectangle with a double-lined diamond inside. It is connected to three entities: 'EntityY', 'EntityX', and 'EntityZ'. Each connection is through a double-lined diamond labeled 'RelationshipA', 'RelationshipB', and 'RelationshipC' respectively. All four relationship lines (to the associative entity and to the three entities) have double vertical bars at the entity ends, indicating mandatory one-to-many relationships.</p>