

# UML Examples

## THE ASSOCIATION SYMBOLS

Associations are modeled between instances of class, between objects. An association indicates that one or more objects “are aware” of one another and capable of sending each other messages.

Associations occur in two general forms: those exhibiting possession and those that do not. Associations that exhibit possession are sometimes referred to as Whole/Part relationships. One class of objects (the parts) are “owned” by another class (the whole). Some associations denote mutual awareness of objects in two classes but neither objects “existence” depends on the other – this is called a simple association or an instance connection.

Cardinality is the key to denoting and interpreting diagrams with association characteristics. Mandatory membership is denoted by cardinality  $\geq 1$ . Optional membership is denoted by cardinality with a lower bound of zero. In the example to the right each of these situations is exhibited. The text description, “scenario,” for the diagram at right follows:

“A grocery store handles orders for products submitted by customers and prepares them for delivery either to the customer’s address or to a predefined pickup station in the store. Orders may be associated with no more than one customer and customers may have no more than four orders at any one time. A grocery order is comprised of one or more order items each of which designates a specific product currently available in the store. Order items are specific to a particular grocery order. Once an order has been completely prepared at the customer’s request it may be sent to a home address or to a designated pickup station. Some pickup stations may have several waiting orders. A grocery order cannot be sent to more than one pickup station.”

