



Relationships

- Association between Tool and Supplier.
- Order Item has an Association relationship with Supplier and Tool.
- InventoryManager has aggregation relationships with Supplier, Tool and Order.
- Order has a Composition relationship with Order.Item
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Multiplicity

- OrderItem --> Order (None or many order items per Order)
- Order --> Inventory Manager (There can None or Many orders pulling from Inventory manager)
- InventoryManager --> Tool (InventoryManager can have None or Many Tool's)
- InventoryManager --> Supplier (InventoryManager can have None or Many Supplier's)
- OrderItem --> Tools (One tool per Order Item)
- OrderItem --> Supplier (One Supplier per Order Item)
- Tool --> Supplier (Many Tools can have one Supplier)

Explanation:

Through the Inventory manager Order, Tool and Supplier are created. Multiple instances of these objects can be created resulting in the one to many multiplicity relationship. This is an aggregation relationship because all 3 of these class objects can exist without inventory manager. Order creates OrderItem which is a composition relationship since when the Order is deleted its OrderItems are also deleted. Each Order can have multiple OrderItem's creating a one to many multiplicity relationship. Tool and Supplier have an association relationship since when a tool is created it must be linked to a supplier. However, a Supplier could provide many different Tool's so this is a many to one relationship. Finally, OrderItem is associated with a Supplier and a Tool. This is a one to one multiplicity relationship.