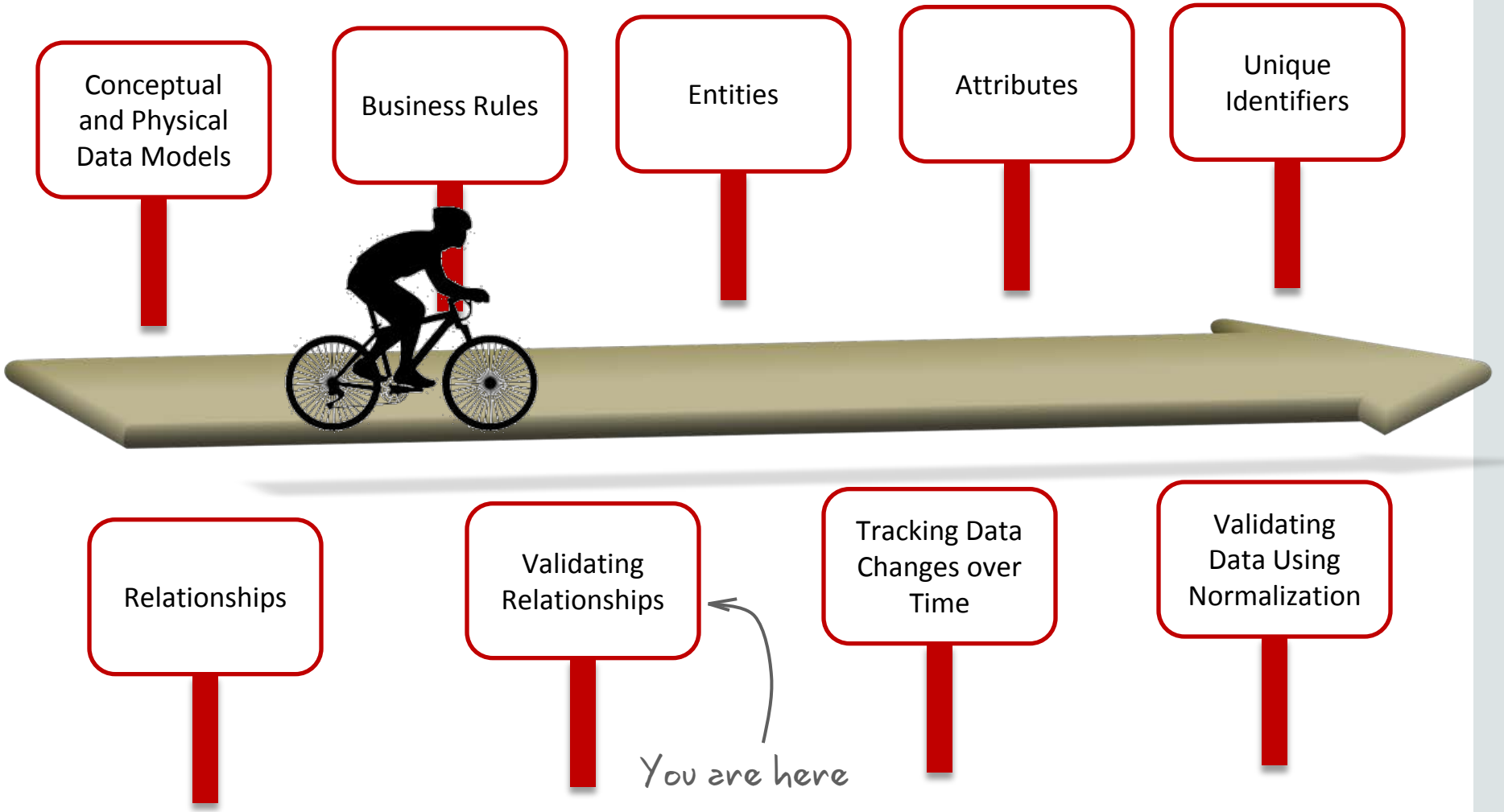

ORACLE
ACADEMY

Database Foundations

3-7
Validating Relationships

ORACLE ACADEMY

Roadmap



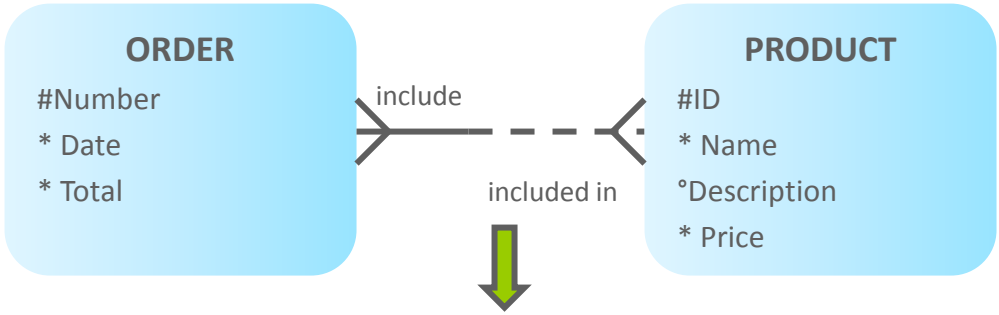
Objectives

This lesson covers the following objectives:

- Resolve M:M relationships
- Identify hierarchical, recursive, and arc relationships
- Identify the UIDs in hierarchical, recursive, and arc relationship models

M:M Relationships

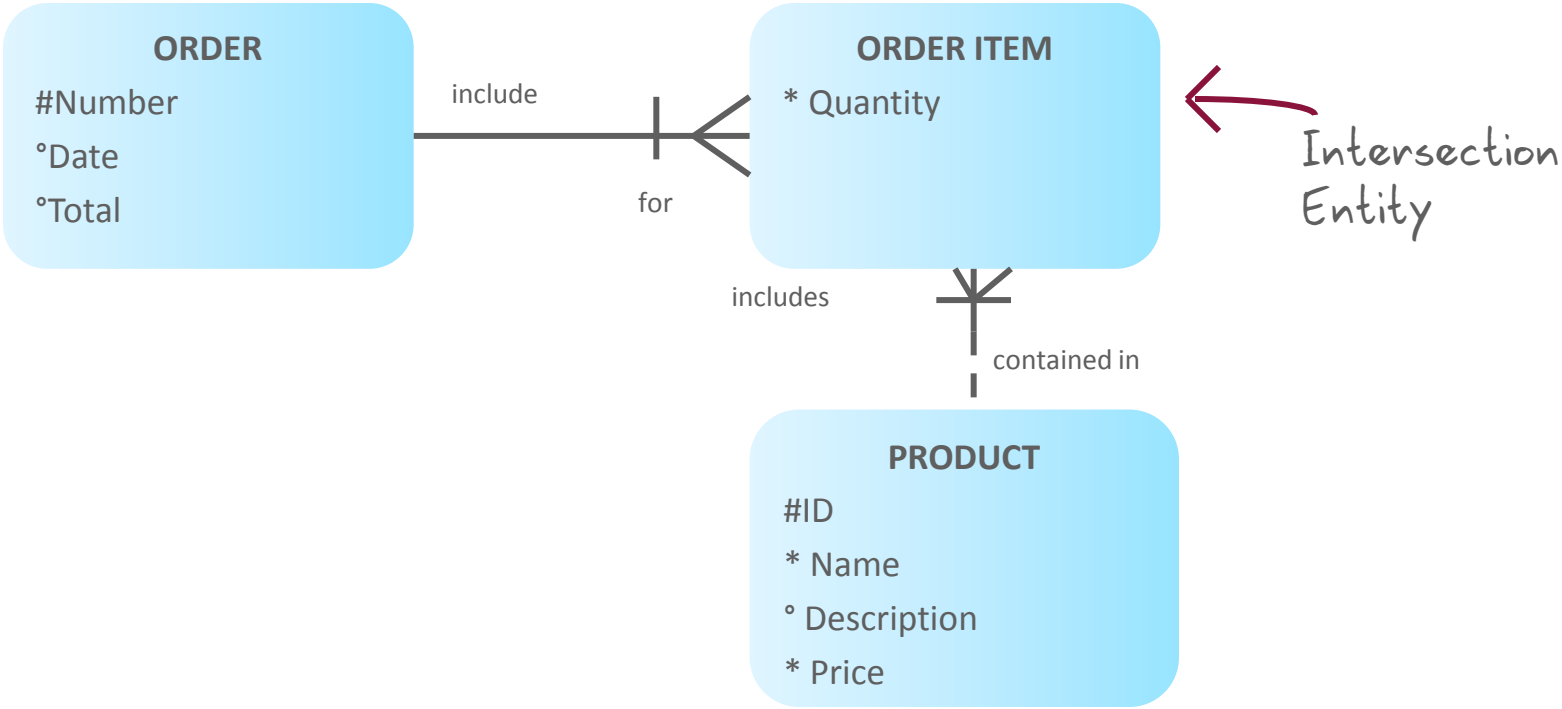
- Attributes describe only entities.
- If attributes describe a relationship, the relationship must be resolved.



Where would you add the Quantity attribute?

Resolving M:M Relationships: Example 1

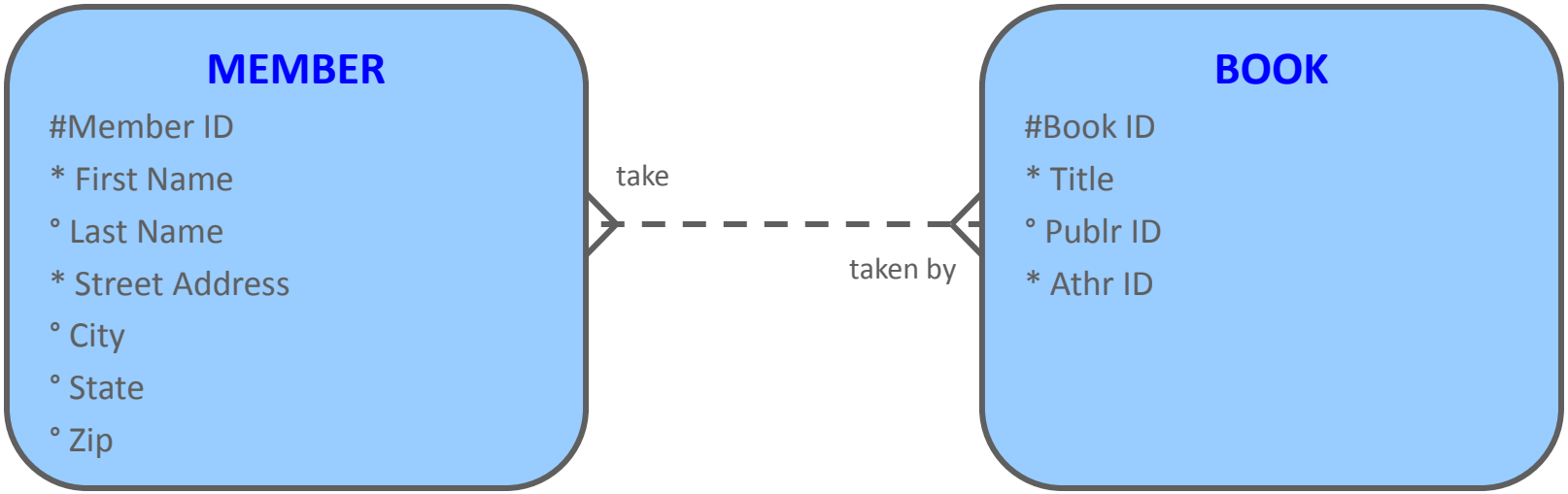
Resolve a M:M relationship with a new intersection entity and two 1:M relationships.



Case Scenario: Resolving M:M Relationships

Faculty

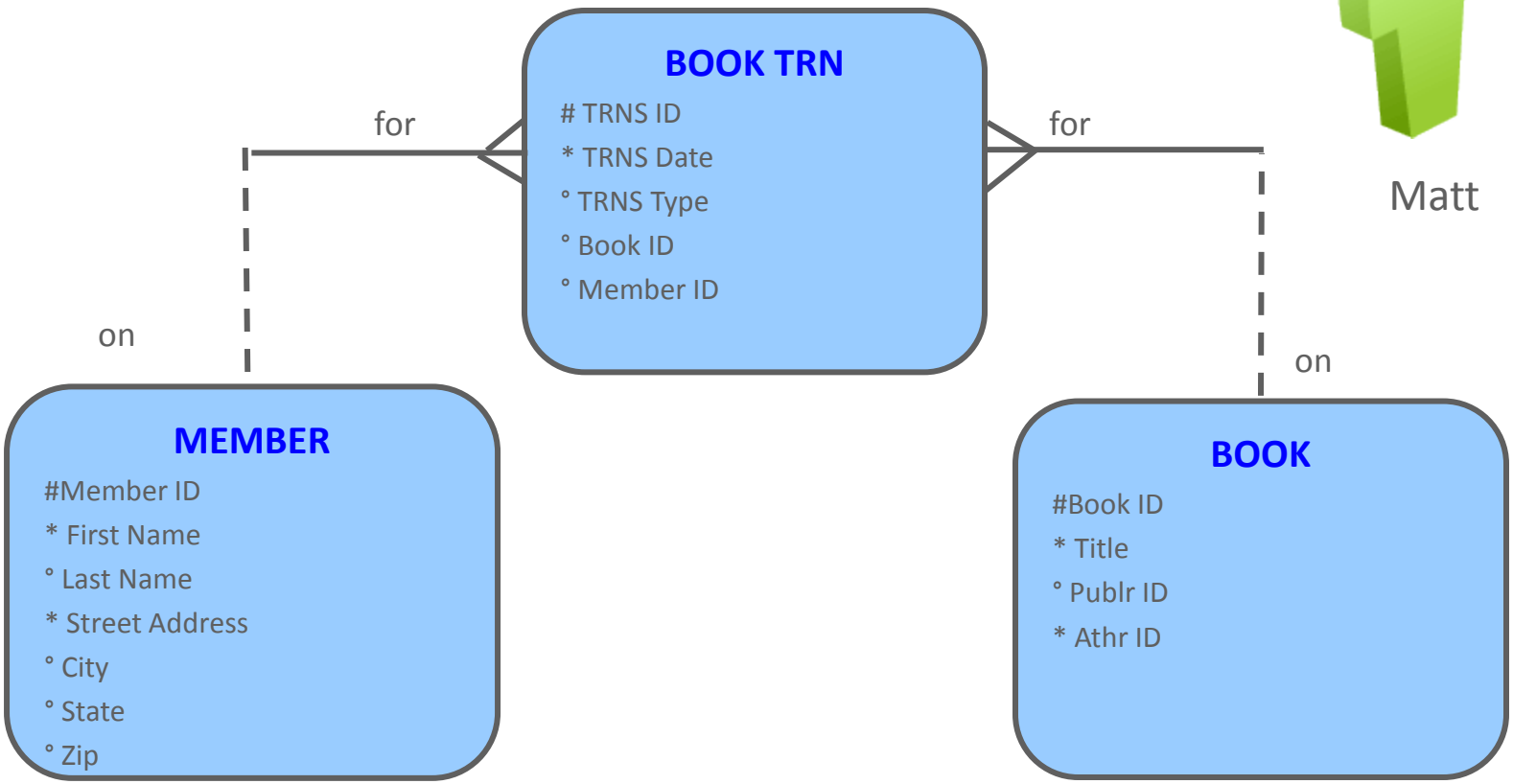
Matt, how would you resolve the following M:M relationship between the MEMBER and the BOOK entities?



Case Scenario: Creating an Intersection Entity

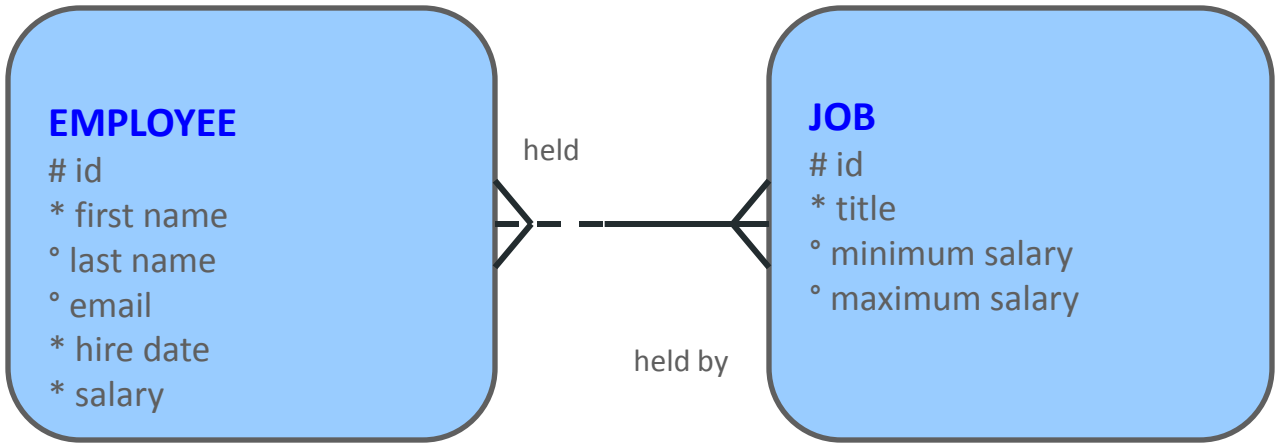
I would create an intersection entity with identifying relationships to the originating entities.

Matt

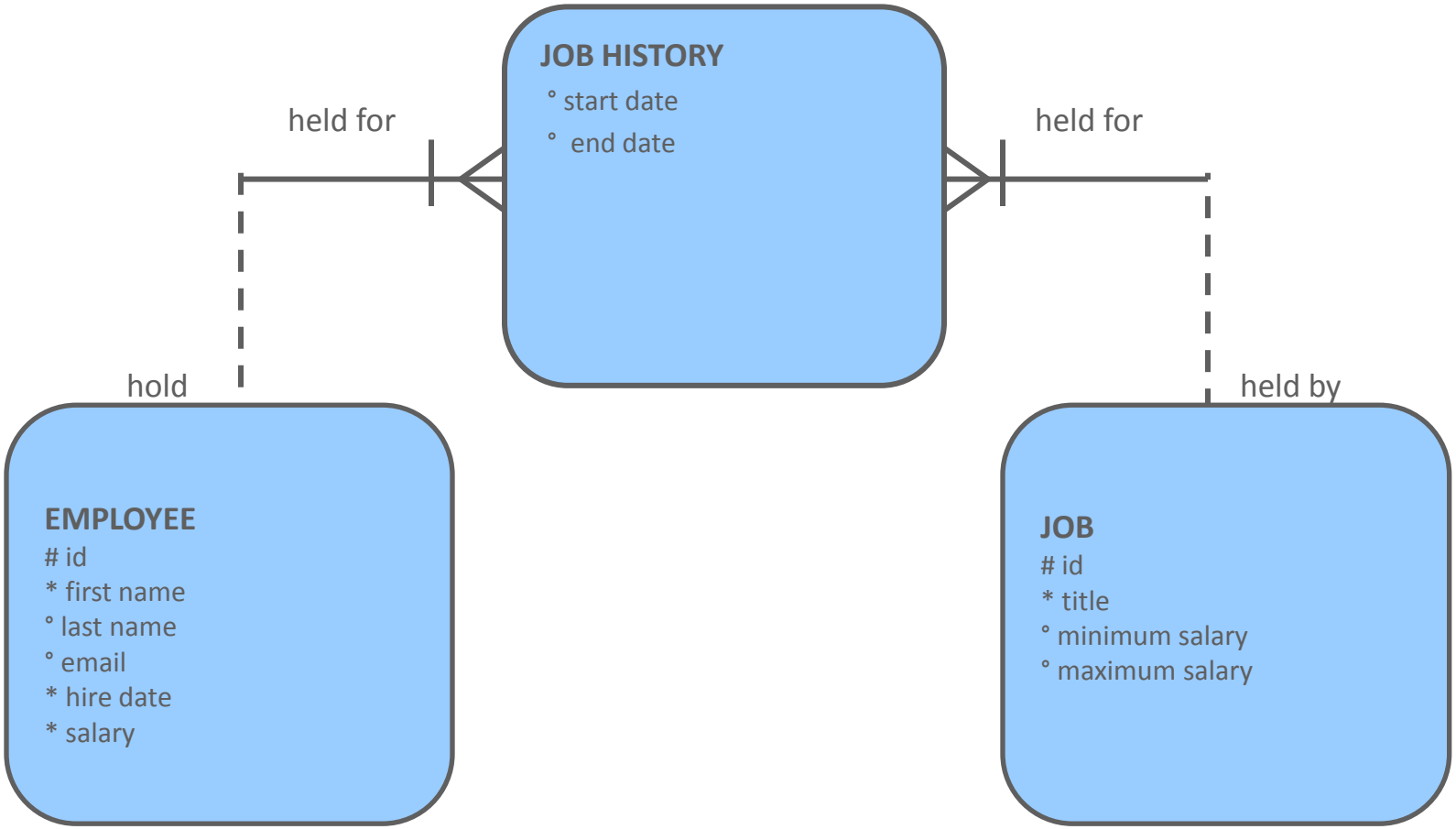


Resolving M:M Relationships: Example 2

The EMPLOYEE and JOB entities do not store the history of an employee's jobs.

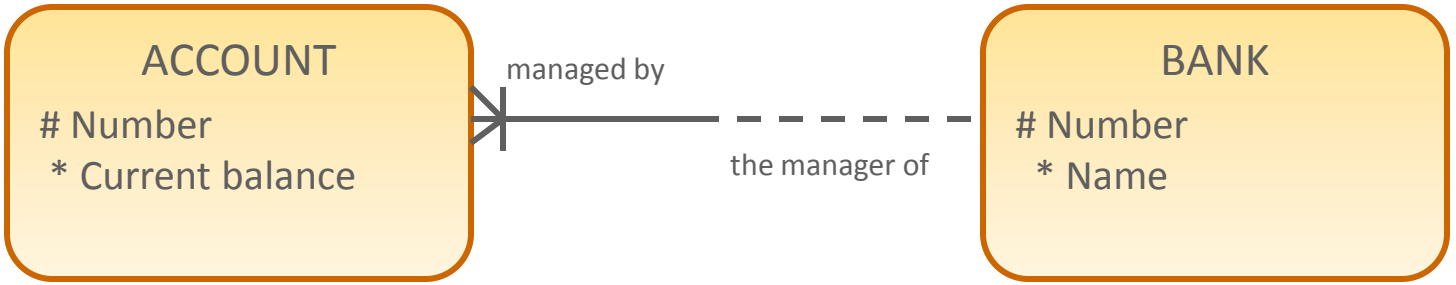


Barred Relationships

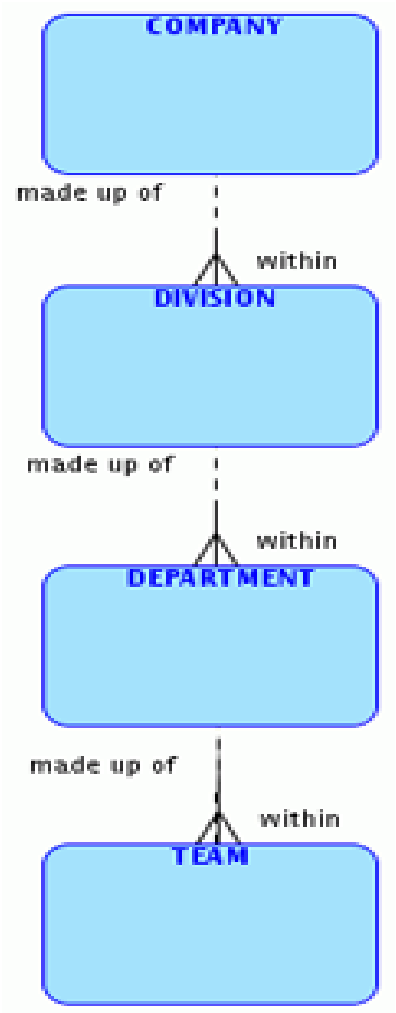


Composite Unique Identifier

A composite UID is a UID that is a combination of attributes or relationships or both.

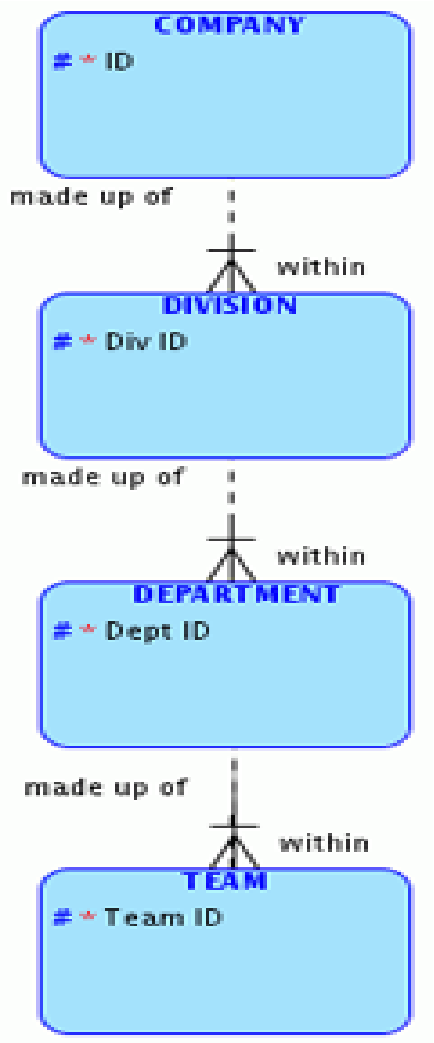


Modeling Hierarchical Data



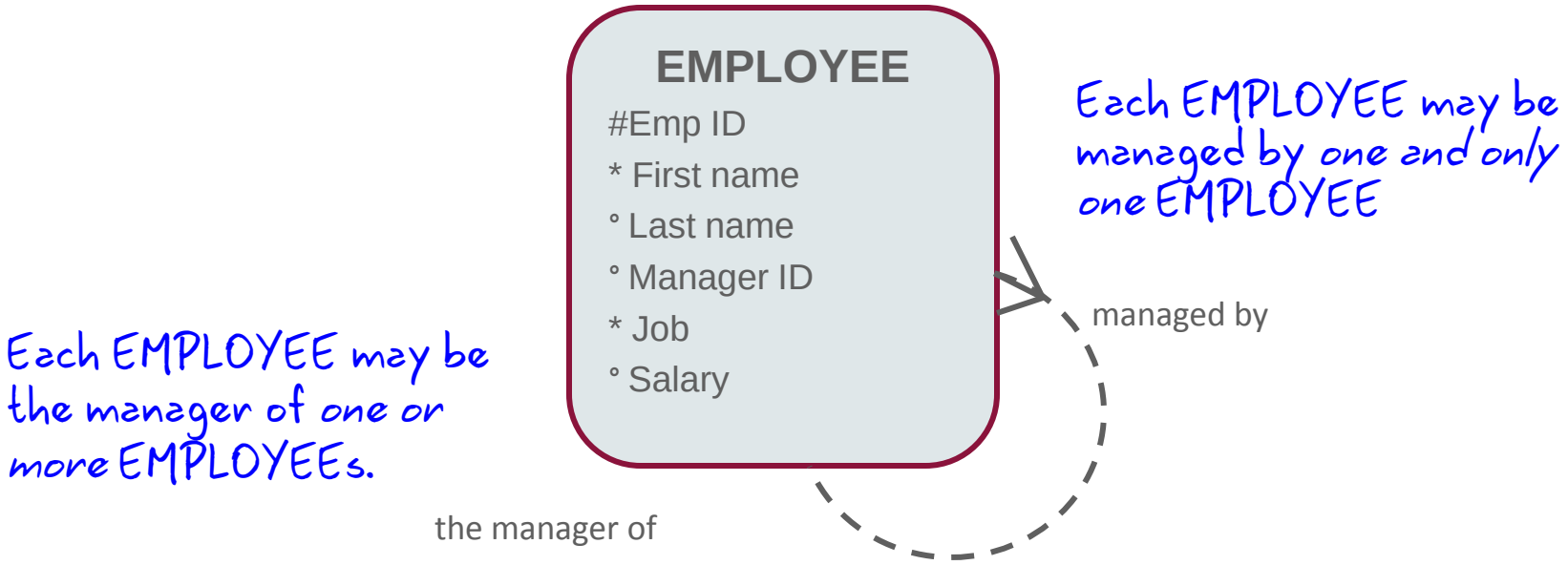
Represent hierarchical data as a set of 1:M relationships.

The UIDs for a set of hierarchical entities can be propagated through multiple relationships.



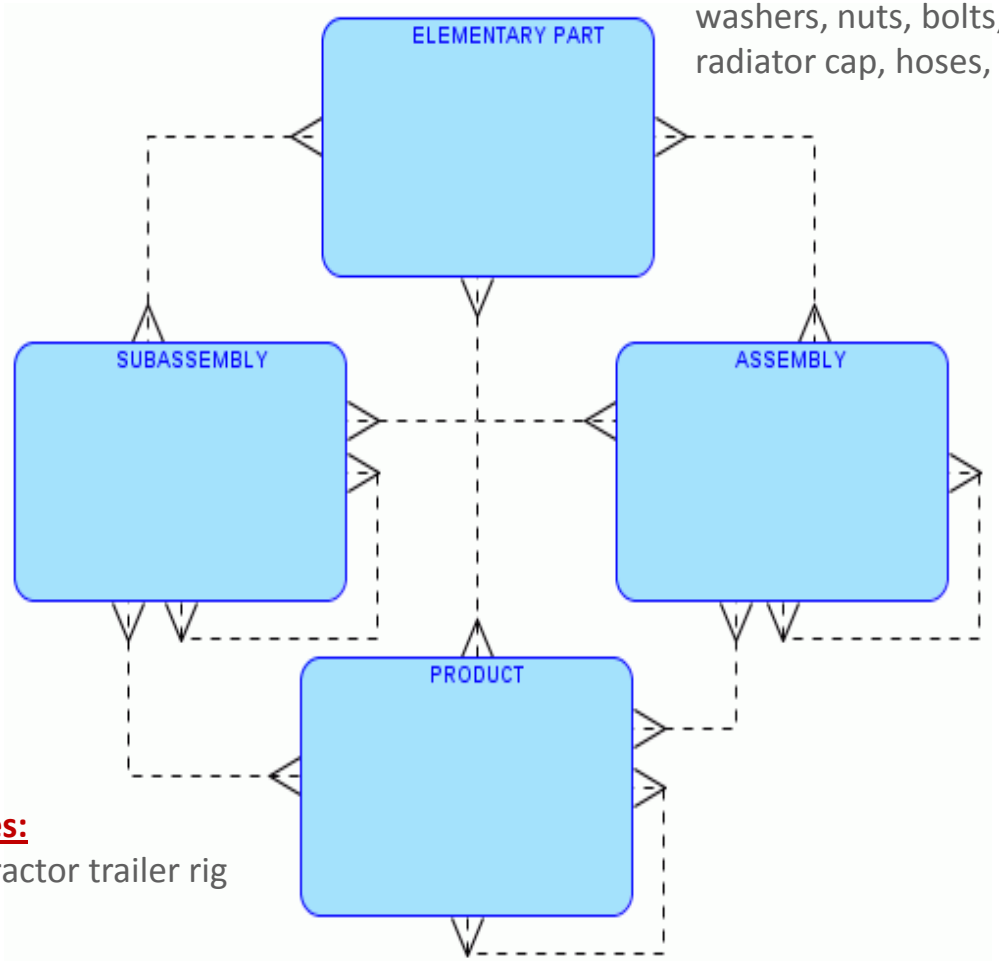
Recursive Relationships

- A recursive relationship is one where an entity instance is related to another instance in the same entity.
- A recursive relationship is always modeled with a loop.



Examining Recursive Relationships

Sample Instances:
washers, nuts, bolts, fan blade, fan belt, radiator cap, hoses, thermostat



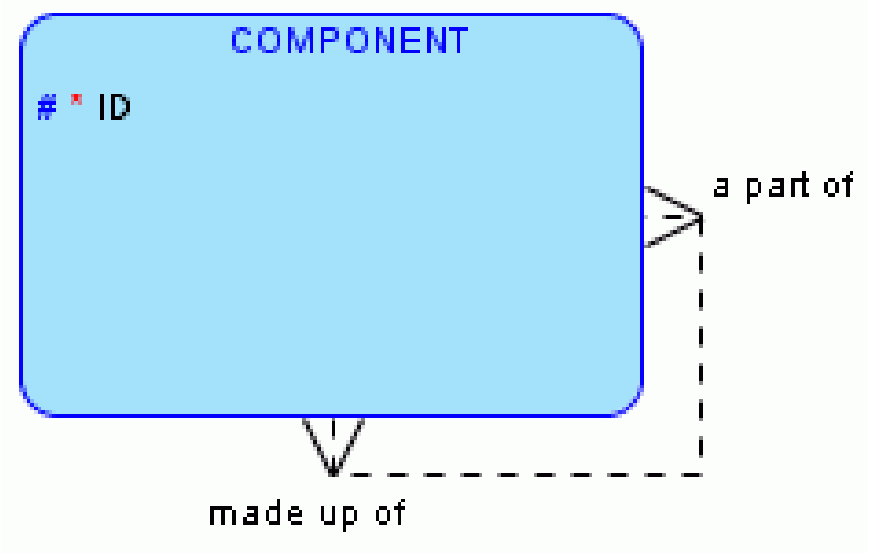
Sample Instances:
fan, radiator, ignition module, carburetor, automatic choke

Sample Instances: cooling system, ignition system, fuel system, engine

Sample Instances:
car, truck, cab, tractor trailer rig

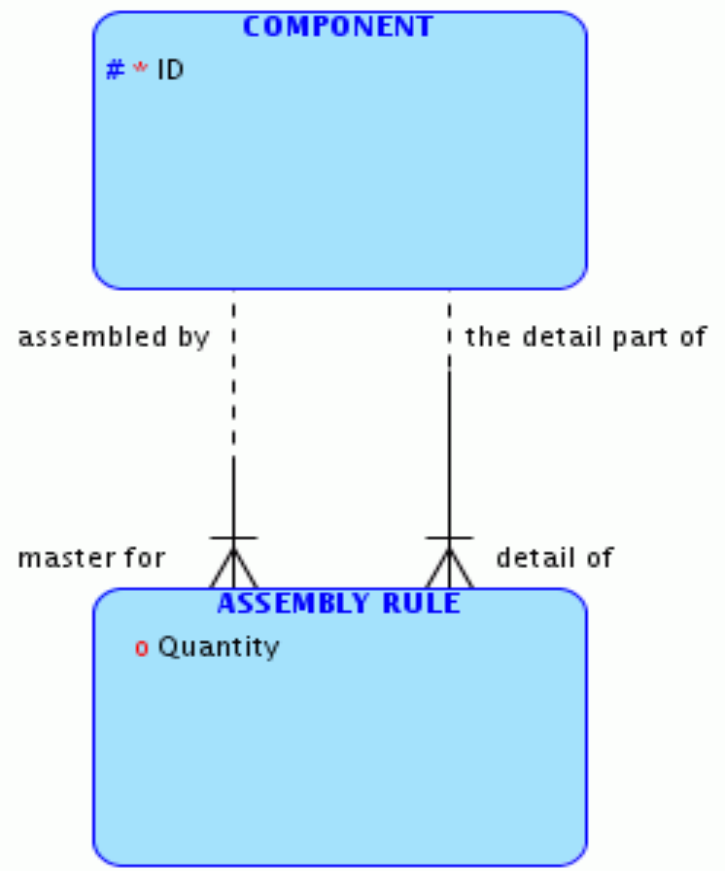
Generic Modeling

Another way to model a Bill of Materials recursive relationship is to create a generic PRODUCT entity.



Resolving an M:M Recursive Relationship

Resolve the M:M recursive relationship with an intersection entity



Arc Relationship

- An arc is an exclusive relationship group, which is defined such that only one of the relationships can exist for any instance of an entity.
- All relations included in an arc should belong to the same entity and should have the same cardinality.
- Arc relationship is represented as the arc-shaped line across two or more relationship lines.

Arc Relationships

A supertype entity and its subtypes can be modeled as an arc relationship.

Example: A PERSON entity is either an EMPLOYEE or a CUSTOMER, but not both.

Case Scenario: Arc Relationship

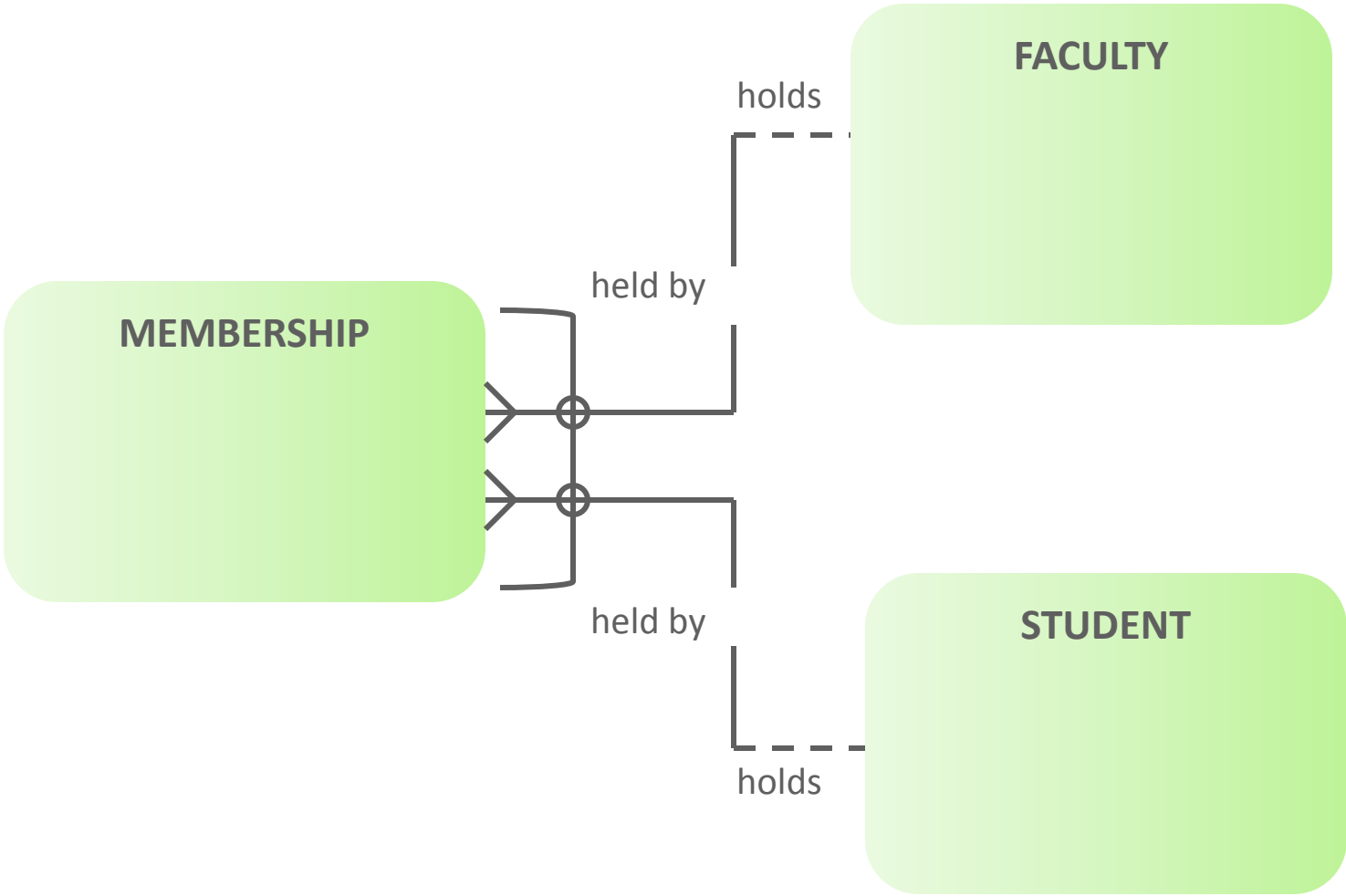
Faculty

Matt, can you create an entity that can have an arc relationship?

I can create a common entity called `MEMBERSHIP` that would hold membership details common to all membership categories.

Matt

Case Scenario: Creating a Common Entity



Summary

In this lesson, you should have learned how to:

- Resolve M:M relationships
- Identify hierarchical, recursive, and arc relationships
- Identify the UIDs in hierarchical, recursive, and arc relationship models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