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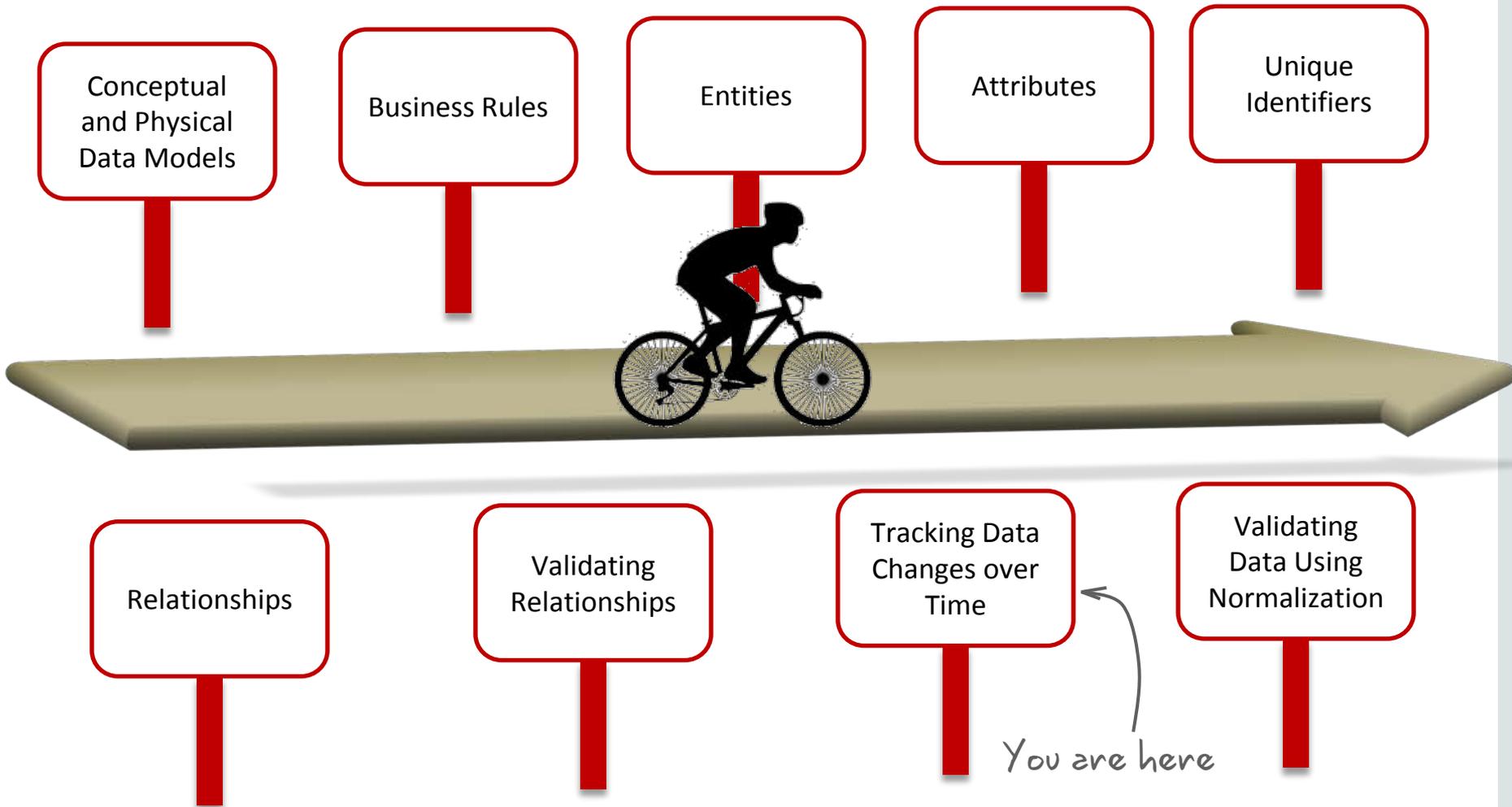
Database Foundations

3-8

Tracking Data Changes over Time



Roadmap



Objectives

This lesson covers the following objective:

- Keep track of data that changes over time



Model Data over Time: Accommodating Historical Data

Add entities and relationships to the model to accommodate historical data.

- Is an audit trail required?
- Can attribute values change over time?
- Can relationships change over time?
- Do you need to query older data?



Model Data over Time: Tracking Attribute Values

Create additional entities to track the attributes' values over time.

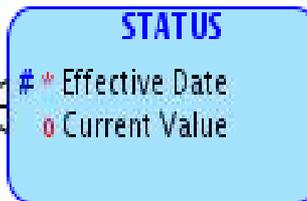


Use one entity if you track only the current status of a contract.



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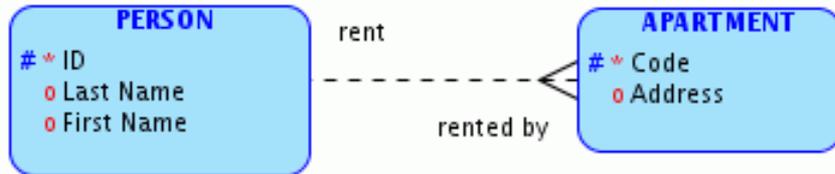
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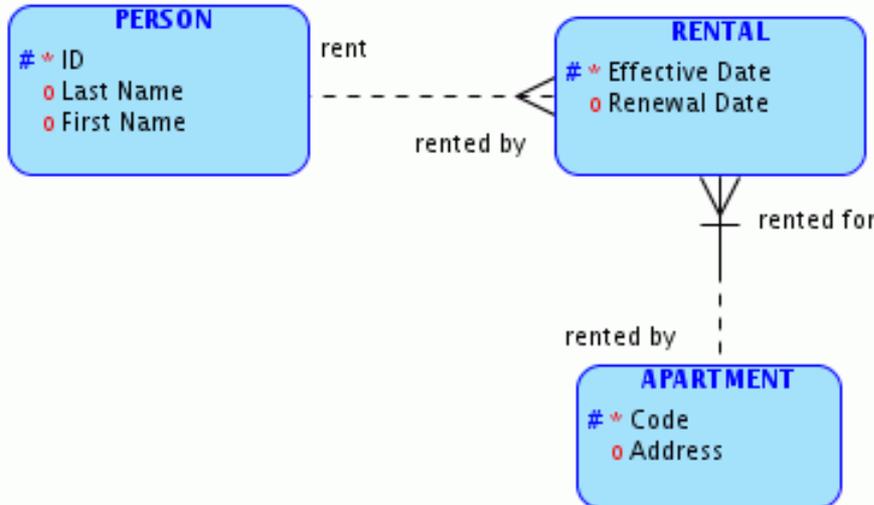
Add an entity to store the status of a contract over time.

Model Data over Time: Accommodating a Changing Relationship

Add an entity to accommodate a relationship that may change over time.



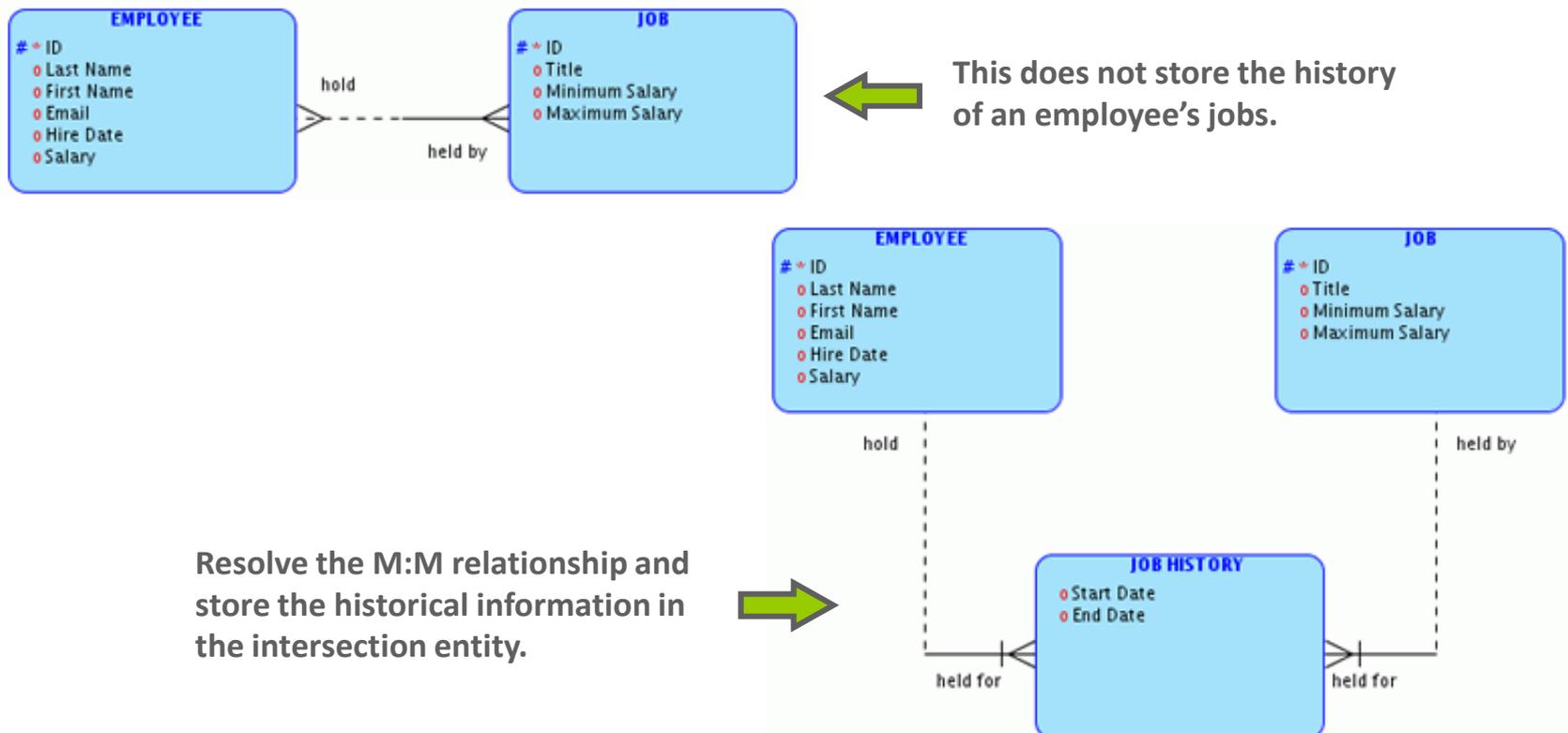
This does not allow tracking of the date that an apartment is rented.



Add an entity to capture the rental relationship over time.

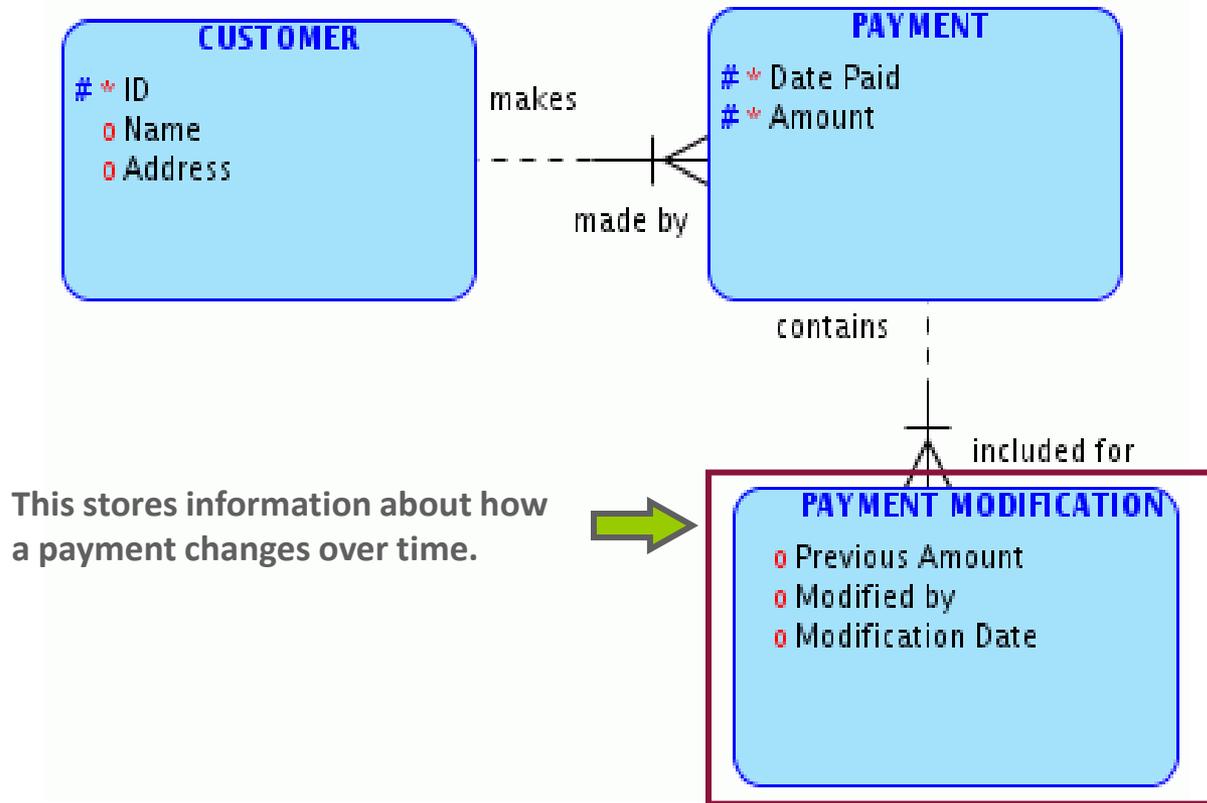
Model Data over Time: Creating Intersection Entities

An intersection entity is frequently used to track information about a relationship that changes over time.



Model Data over Time: Logging Modified Information

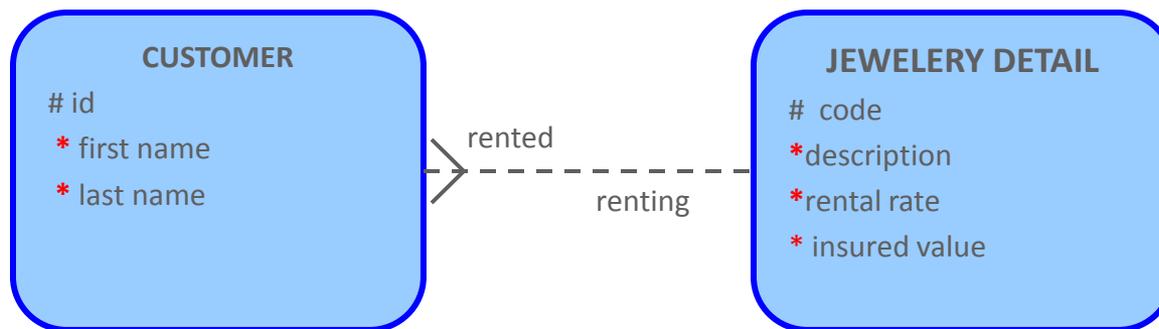
Additional entities and attributes store modified information.



This stores information about how a payment changes over time.

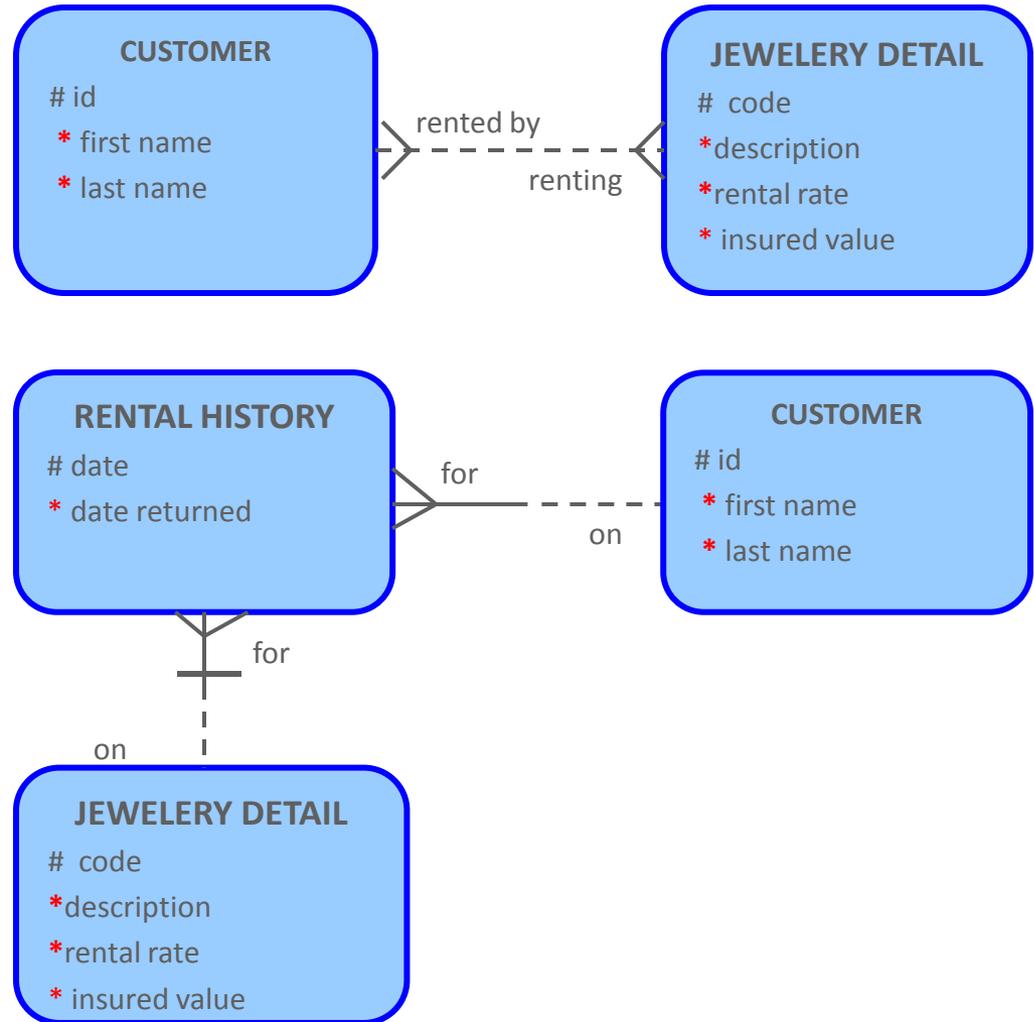
Model Rental over Time: Scenario

A jewelry store rents necklaces, bracelets, and the like for special occasions, such as award ceremonies and movie premieres. The store wants to track the rental history. The ERD model tracks only the current renter. How would you revise the relationship to track the history?



Resolve M:M

- Change the relationship between JEWELRY DETAIL and CUSTOMER to M:M.
- Resolve M:M with the RENTAL HISTORY intersection entity.
- What is the UID of RENTAL HISTORY?



Summary

In this lesson, you should have learned how to keep track of data that changes over time.



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