




RELATIONAL DATABASES

BSc IoT



Objectives

- Define the rule of Third Normal form in the normalisation process
- Identify transitive dependencies in a data model
- Examine a non normalised entity and determine which rule or rules of normalisation are being violated
- Apply the rule of third normal form to resolve a violation in the model

Third Normal Form

- Think of the kind of information you'd like to store about CDs
- Does information about the store where you bought it belong in the same entity?
- If the store address changed you would need to change that information on all the CDs bought in that store

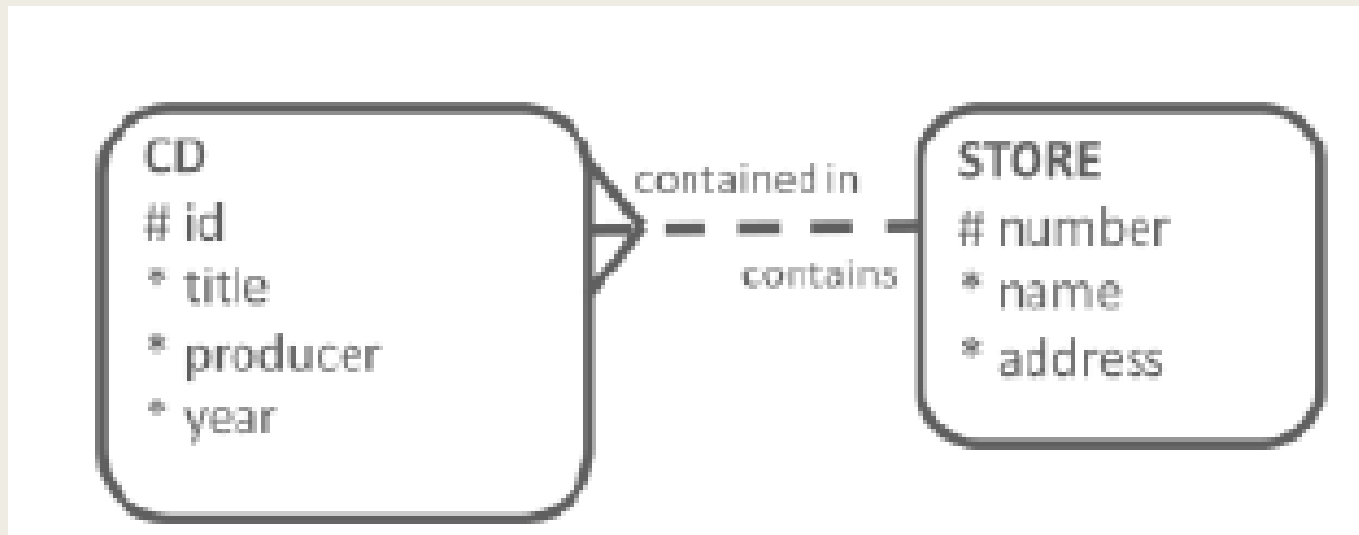


Third Normal Form

- To check if an entity is in Third Normal Form, examine each non-UID attribute to check for transitive dependency with other non-UID attributes
- In the above example the store name is dependent on the CD number
- Store address is dependent on the CD number but it is also dependent on the store name which is a non-UID attribute
- This is an example of transitive dependency

Third Normal Form

- To resolve a third normal form (3NF) violation, you create a new entity, move the attributes that were causing the violation to the new entity (adding a UID), and draw a relationship to the original entity.
- For an entity to be in 3NF it must also already be in 2NF



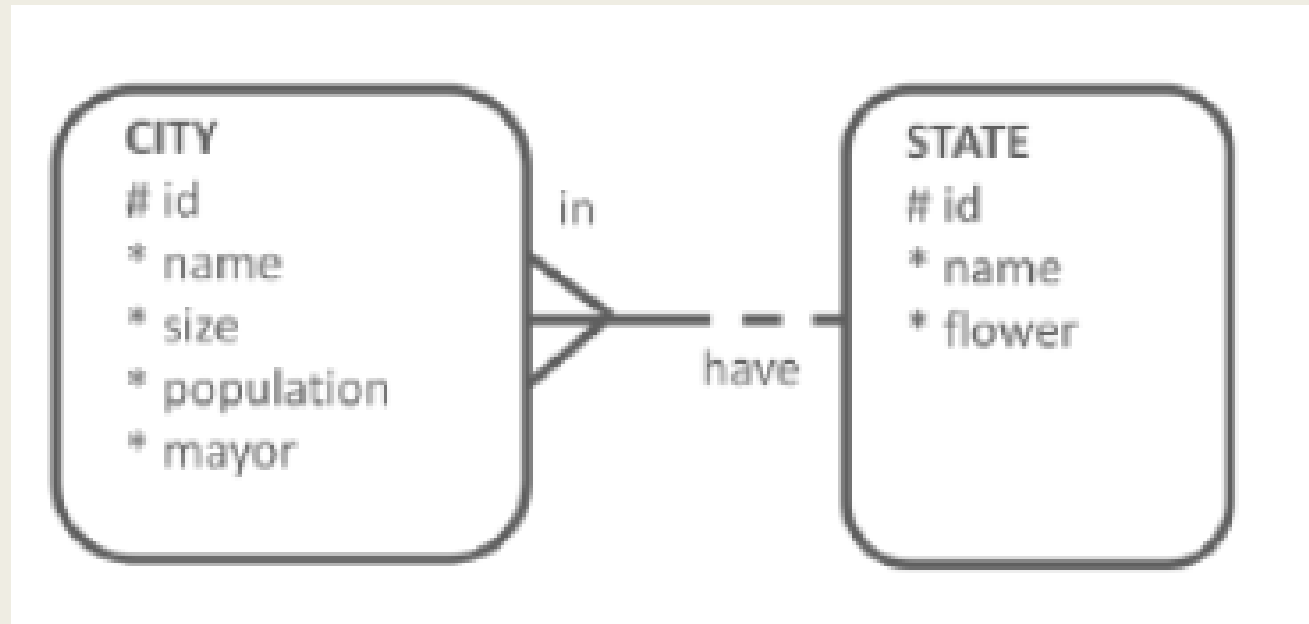
Third Normal Form

- Consider a system that tracks information about cities – size, population, mayor and so on
- The model shows an entity that includes state information
- Although state is a property of city id, state flower is really a property of state.

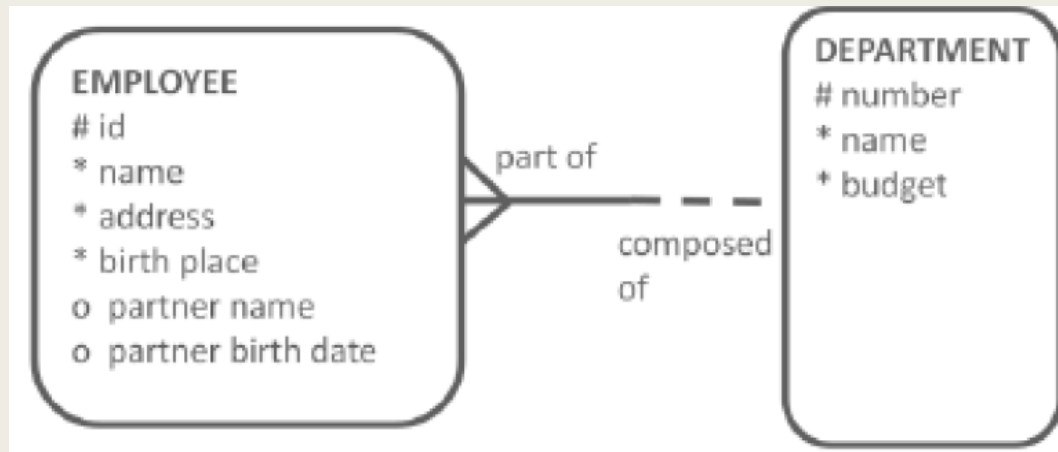


Solution

- The following entities are in 3NF with the new entity STATE



Third Normal Form



- In this example assume the following business rule: each employee can have one partner
- How do you resolve this?

