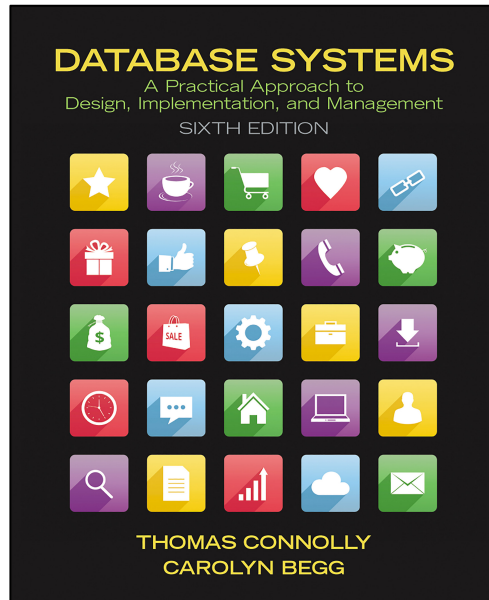

Classes of ER issues

Topic 1 Lesson 3
Common problems with conceptual design

Chapter 12 Section 6 Connolly and Begg



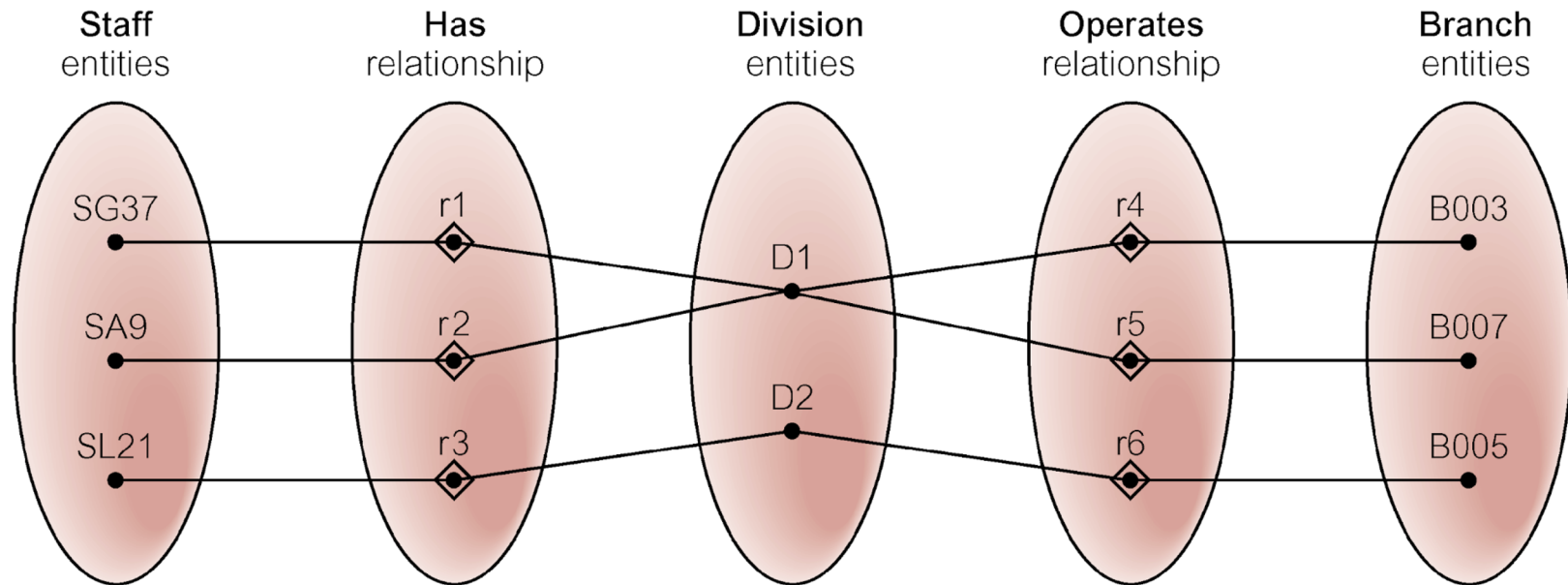
Example: Fan Trap

One should be able to answer the question: At what branch does each staff work? Since division merges branches this question cannot be answered.



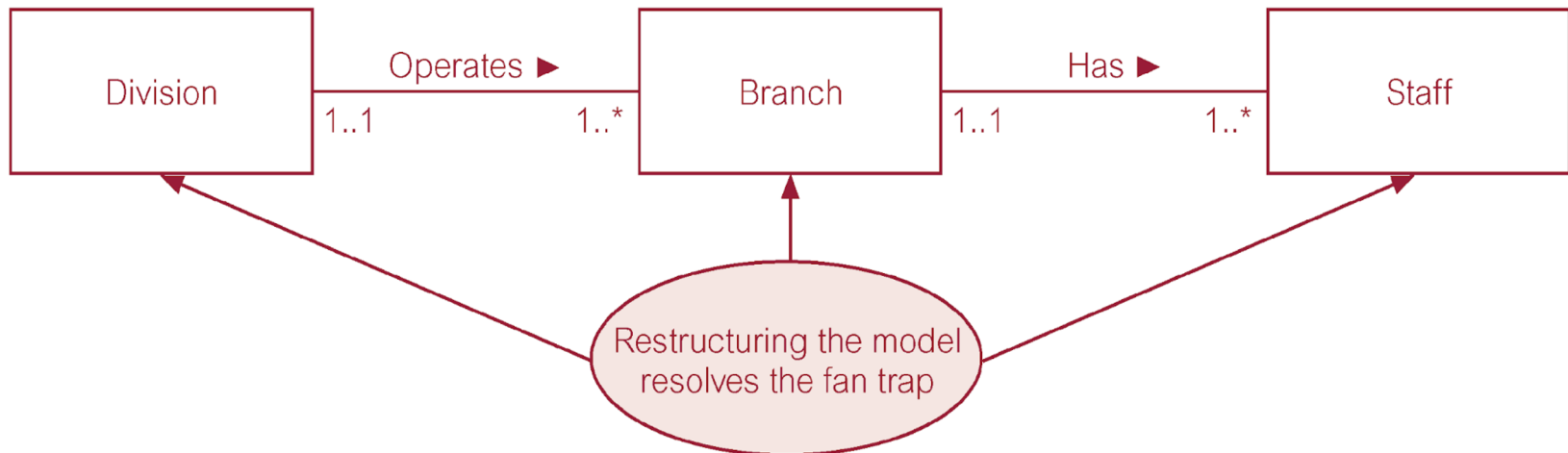
Semantic Net of ER Model with Fan Trap

The division entity has “fans” on the left and the right. For any one staff member we cannot trace back to one and only one branch. There is a loss of information with this representation.



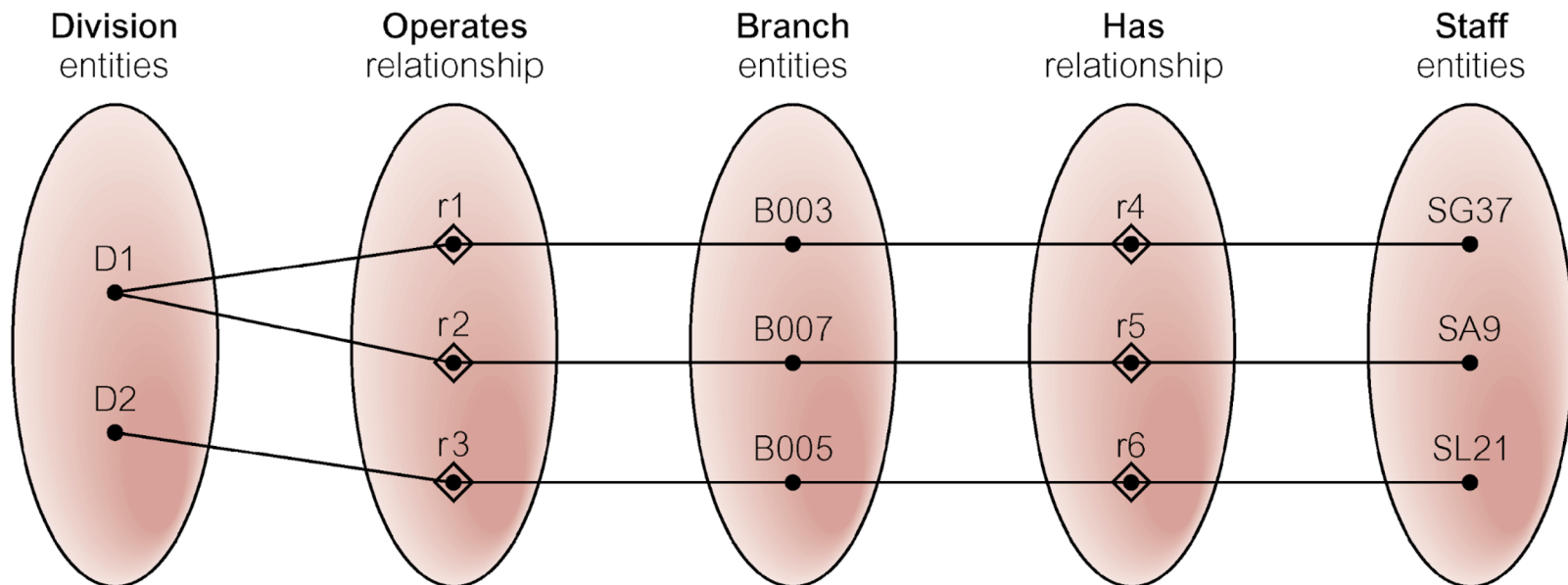
Problem can be solved with restructuring

Remove the fan from the diagram by defining the relationship between branch and staff as opposed to between division and staff



Semantic net without the fan trap

We can identify that staff member SG37 works at branch B003



Chasm trap: another common problem

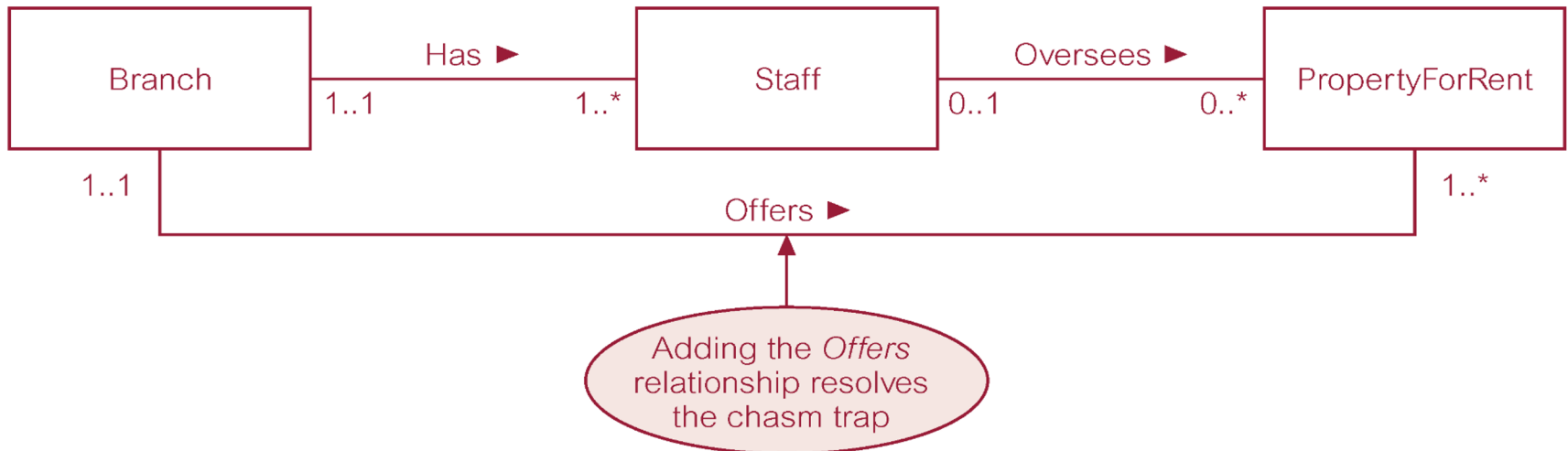
What if a staff member has not yet been assigned to oversee a specific property for rent? The property should still be associated with a specific branch. In this representation we do not capture this information.



Cannot deduce a relationship due to optional (non-participatory) relationships

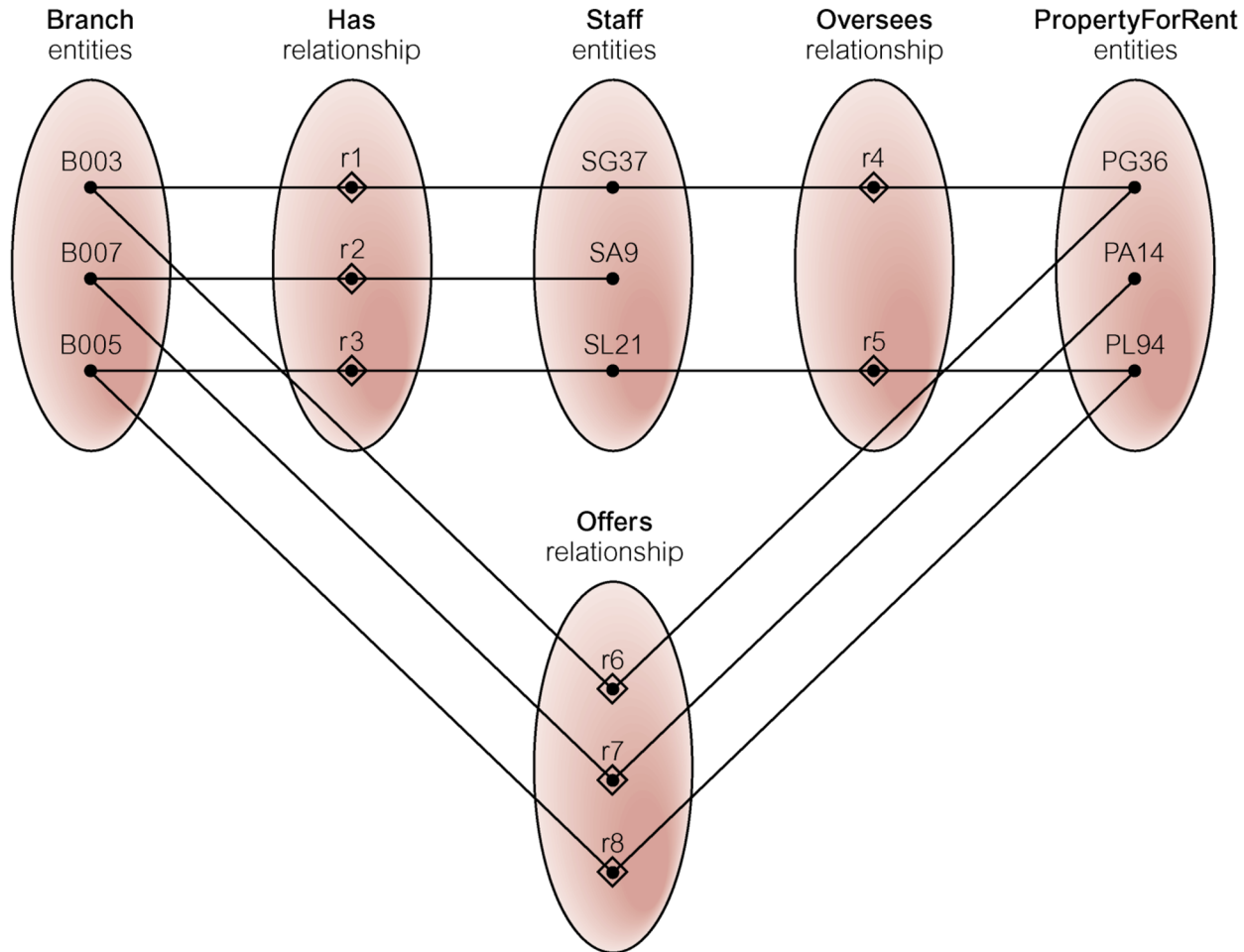
Remove the chasm trap

We need to add an additional relationship to represent this information.



Semantic net with new relationship

No loss of information with this representation



Summary

Fan trap issue

Chasm trap issue