

COP 4710: Database Systems Fall 2006

Chapter 3 – In Class Exercises

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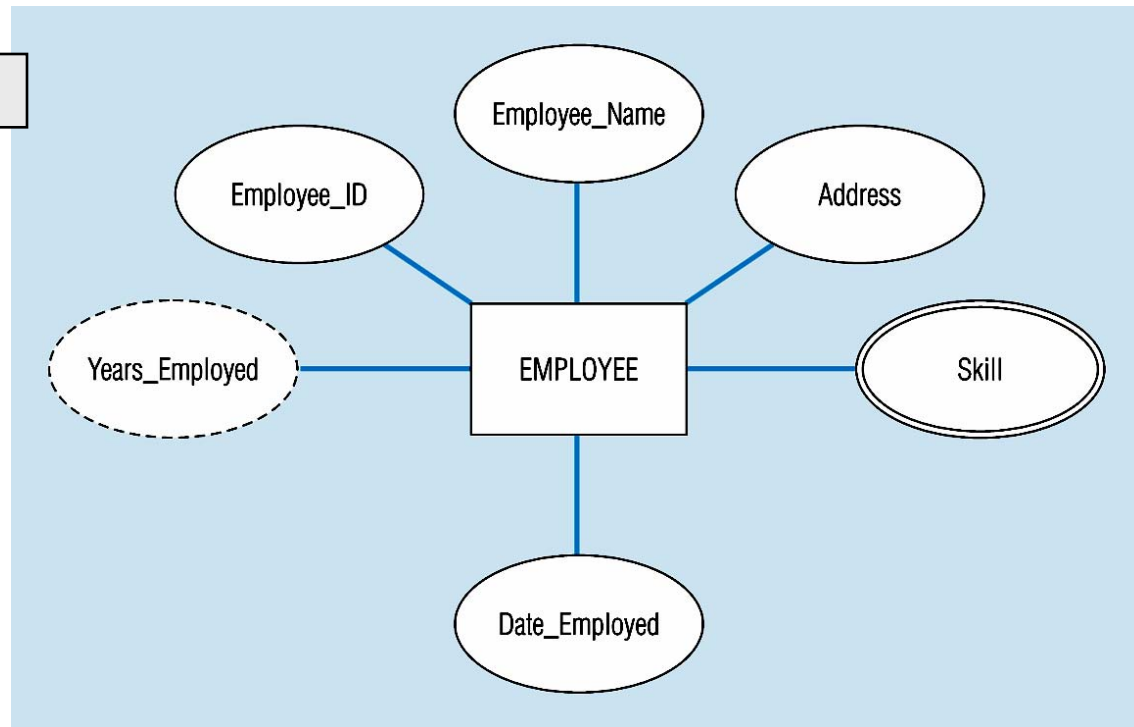
School of Electrical Engineering and Computer Science
University of Central Florida



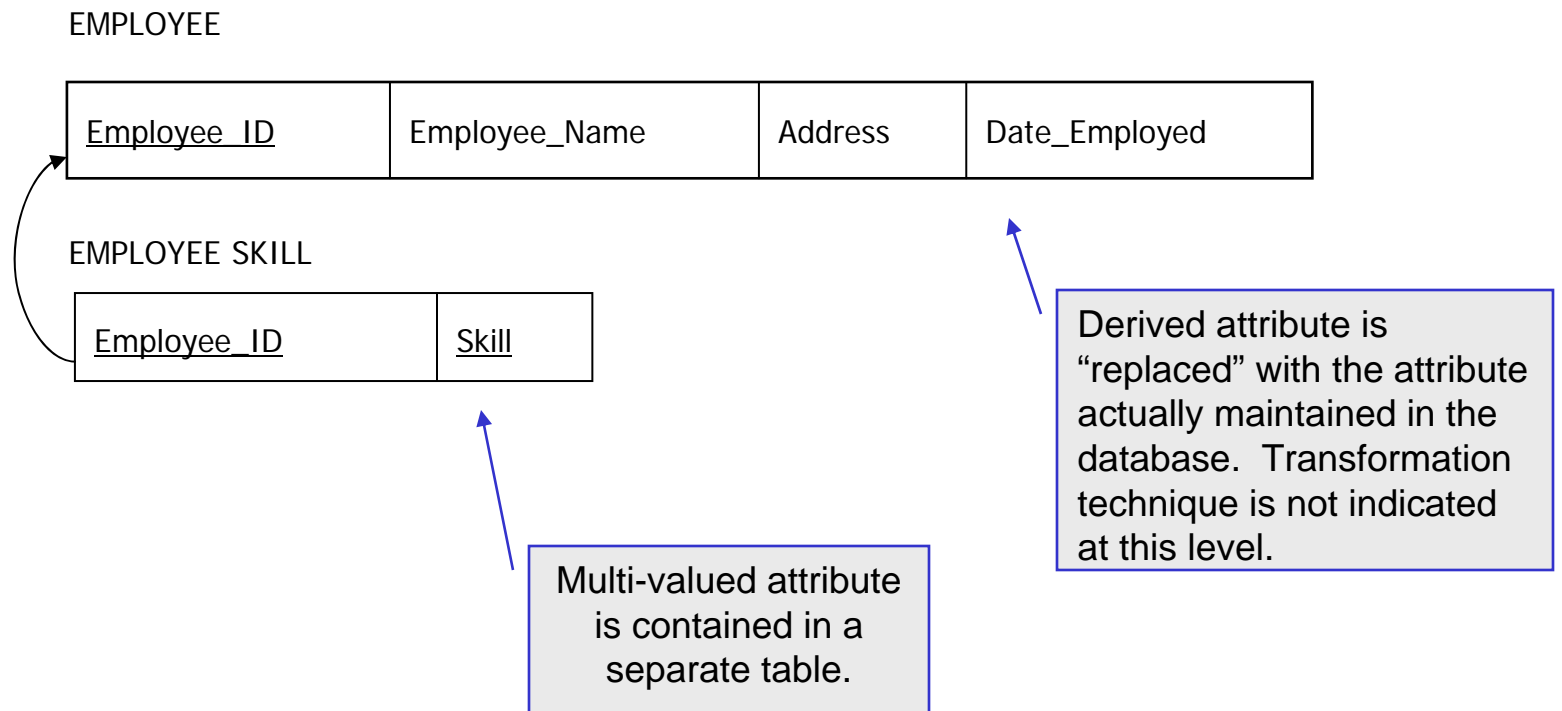
Introduction

- Transform each of the ER diagrams shown on this and the following few pages, into a set of relational schemas which show referential integrity constraints.

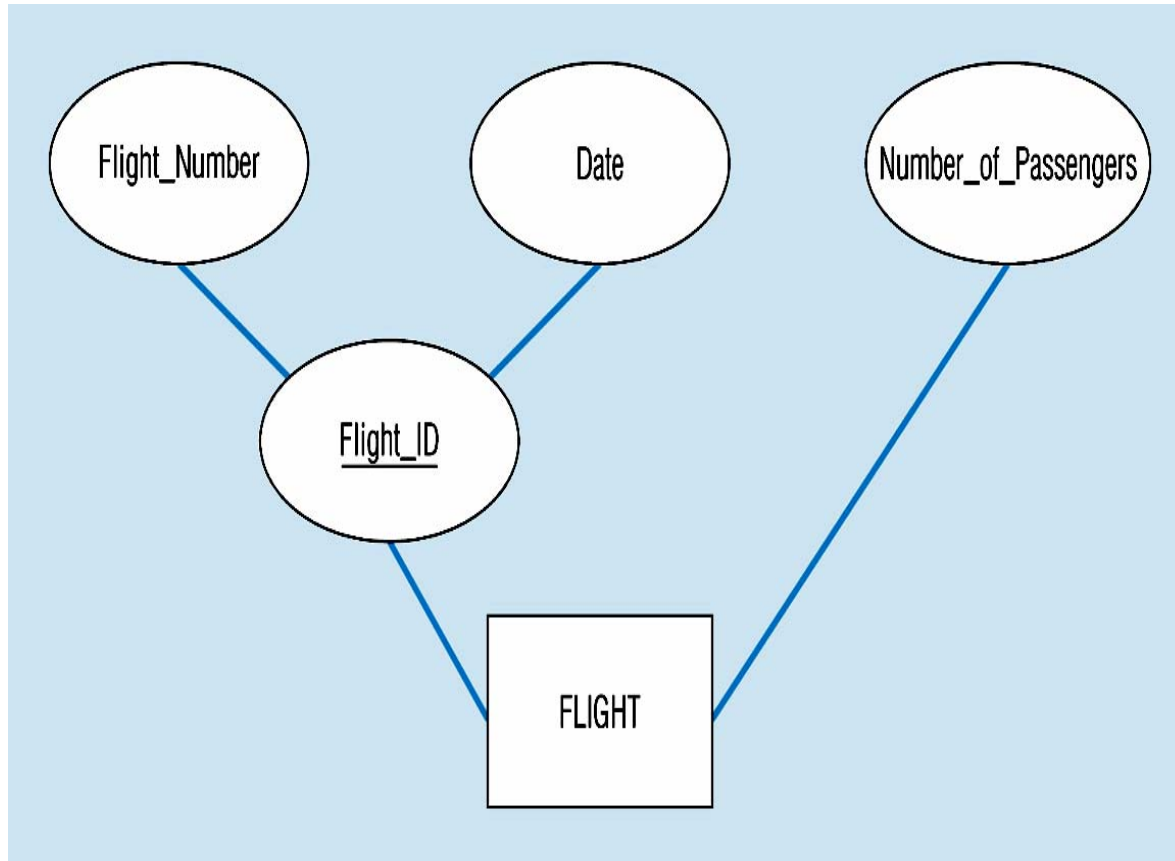
Problem #1



Solution for Problem #1



Problem #2



Solution for Problem #2

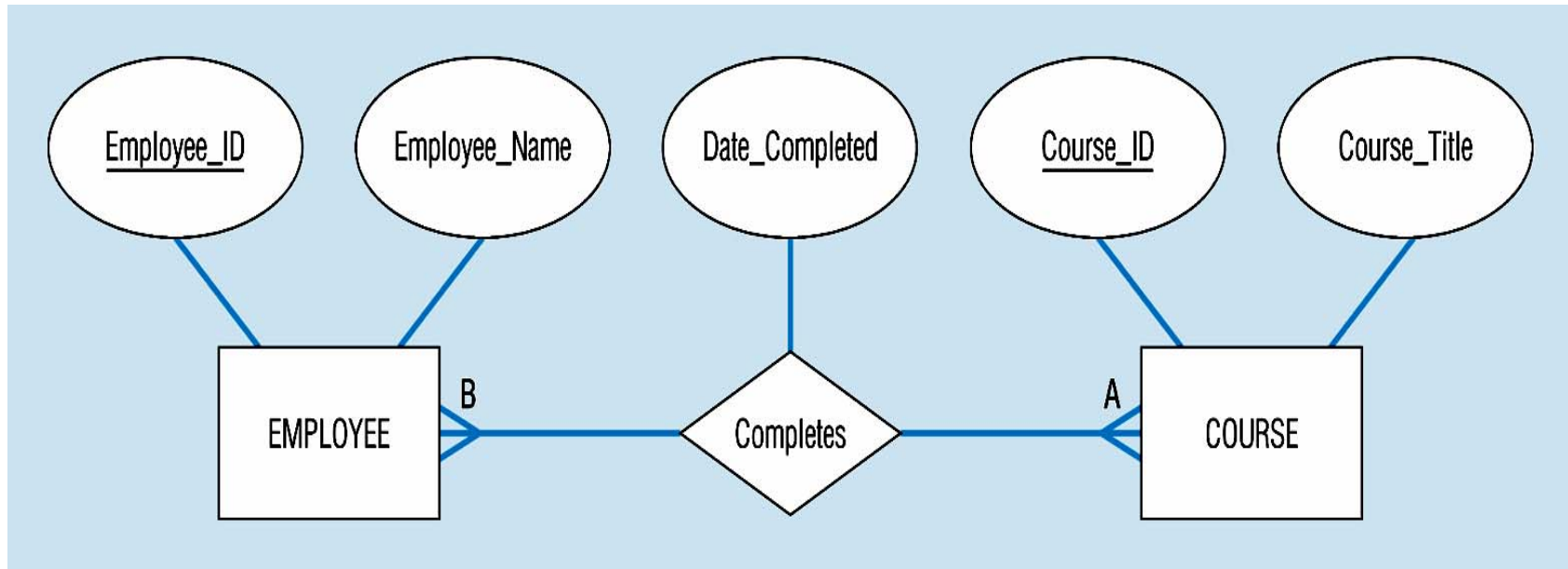
FLIGHT

<u>Flight_Number</u>	<u>Date</u>	Number_of_Passengers
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Composite attribute Flight_ID is replaced by both of the sub-component attributes of the original composite attribute. Note that since the original composite attribute was a key attribute that all of the sub-component attributes are now key attributes.



Problem #3



Solution for Problem #3

EMPLOYEE

<u>Employee_ID</u>	Employee_Name
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COMPLETION

<u>Employee_ID</u>	<u>Course_ID</u>	Date_Completed
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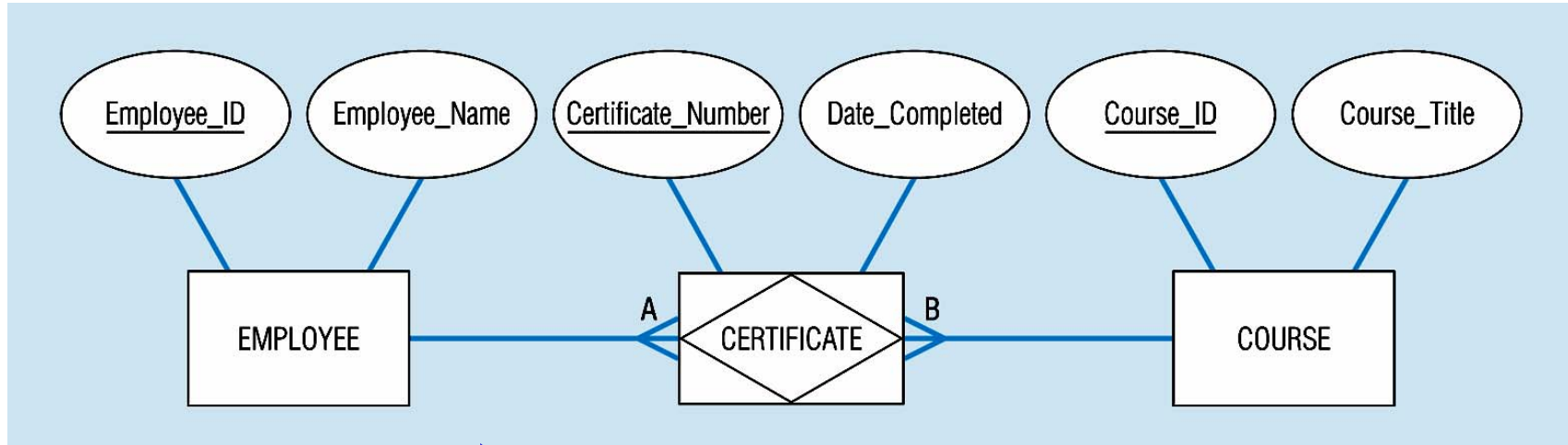
COURSE

<u>Course_ID</u>	Course_Title
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The M:M relationship is modeled as a third table.



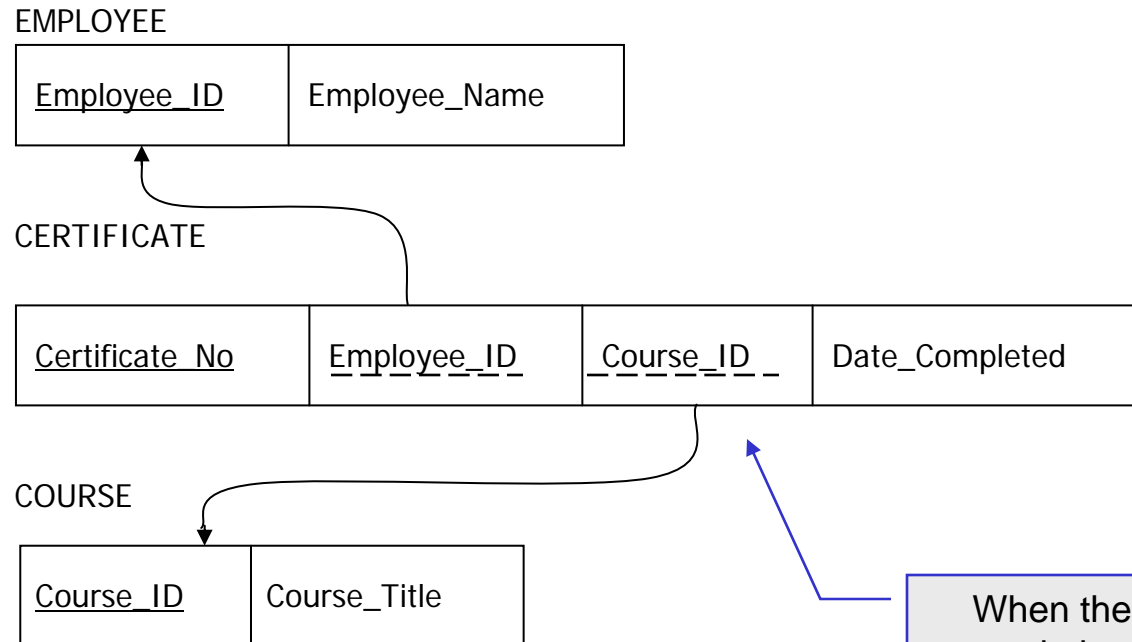
Problem #4



Note that this is the same problem as #3, however, this time the relationship has been modeled as an associative entity rather than as a simple M:M binary relationship.



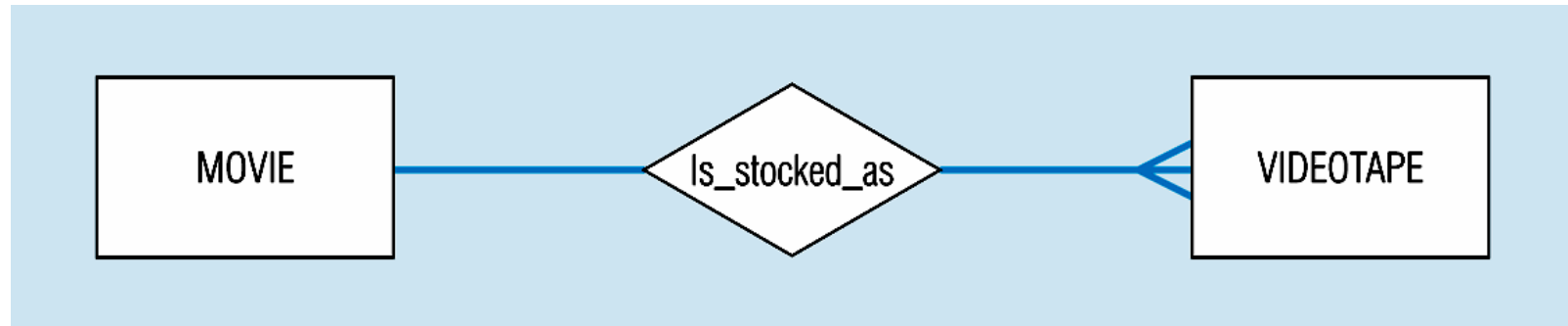
Solution for Problem #4



When the certificate is modeled as an associative entity and has an identifier (in this case the certificate number), that identifier becomes the key of the relation scheme with the identifiers in the two participating entity sets becoming foreign keys in the associative entity table.



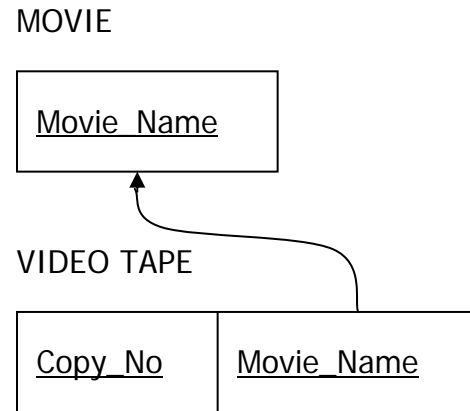
Problem #5



Basic 1:M binary relationship.



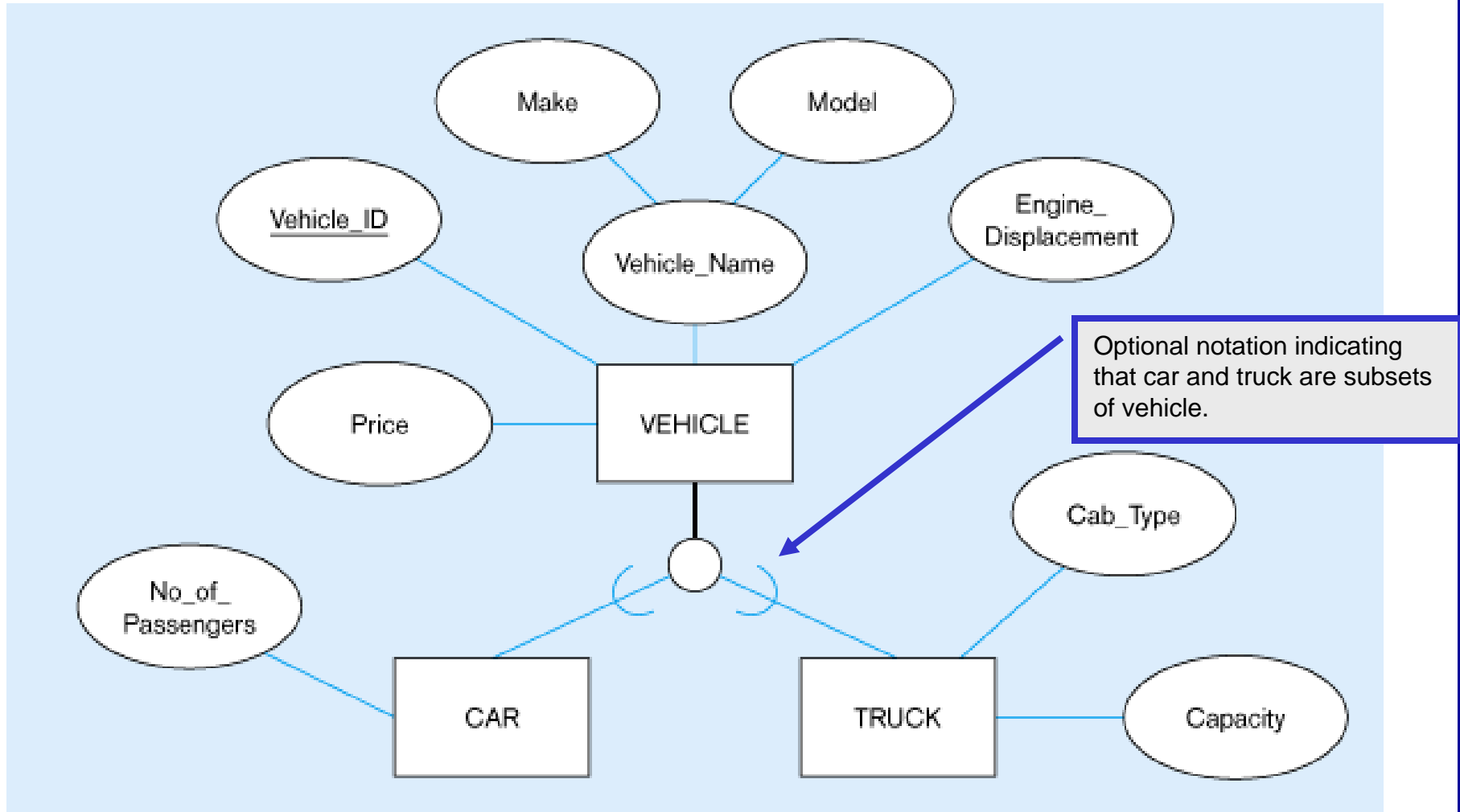
Solution for Problem #5



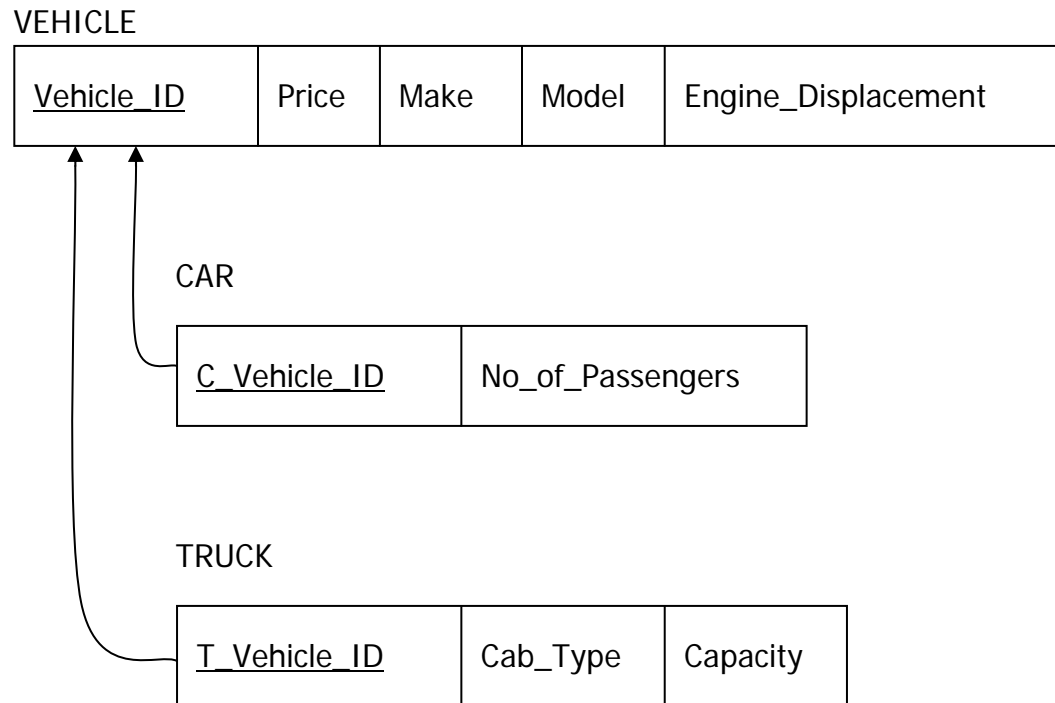
When the certificate is modeled as an associative entity and has an identifier (in this case the certificate number), that identifier becomes the key of the relation scheme with the identifiers in the two participating entity sets becoming foreign keys in the associative entity table.



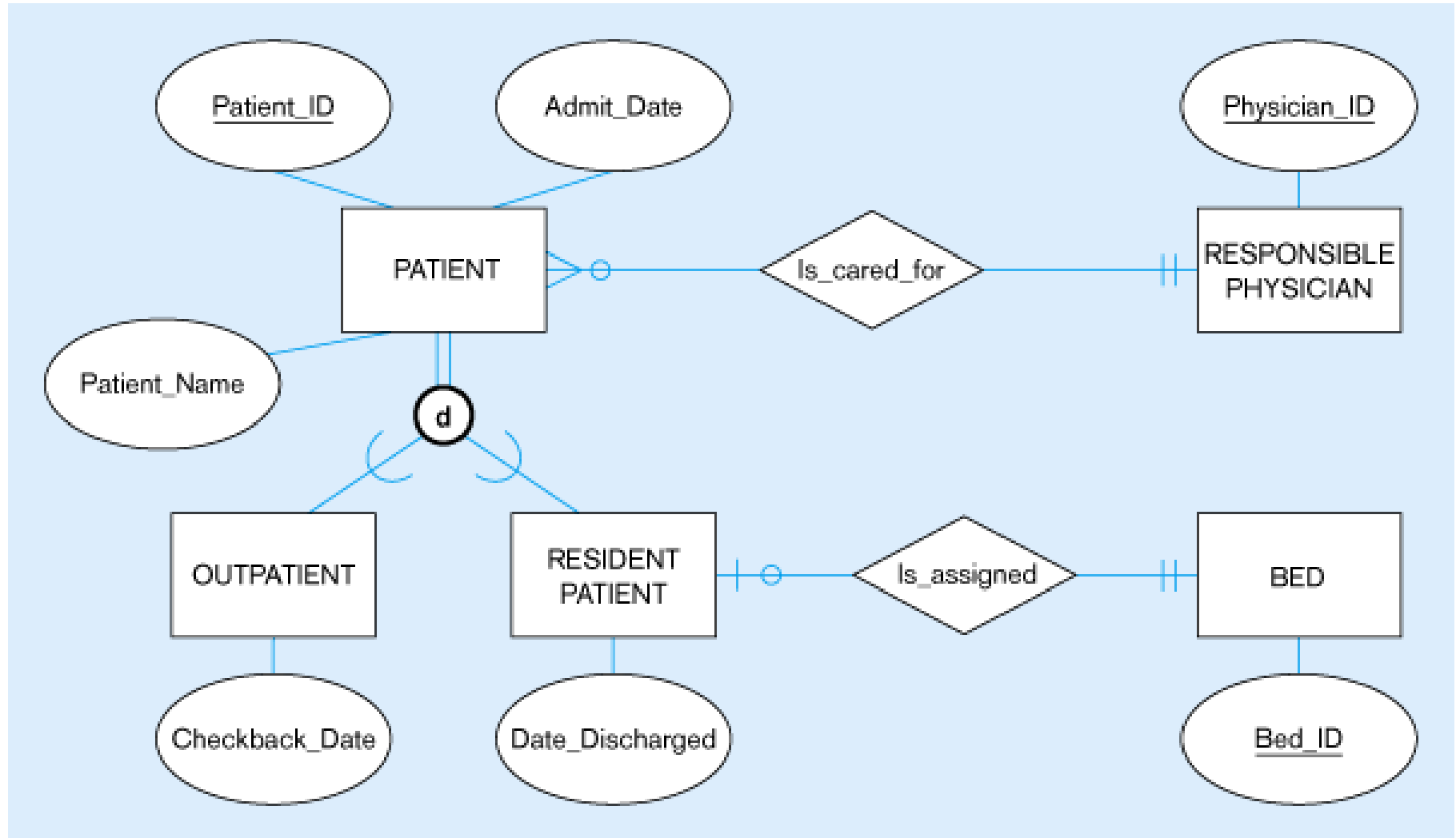
Problem #6



Solution for Problem #6

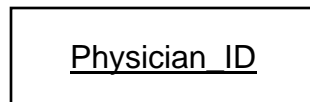


Problem #7

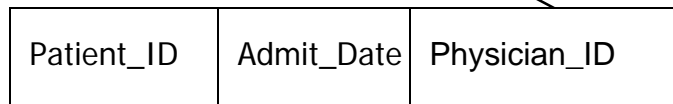


Solution for Problem #7

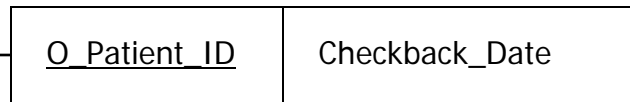
RESPONSIBLE PHYSICIAN



PATIENT



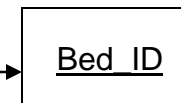
OUTPATIENT



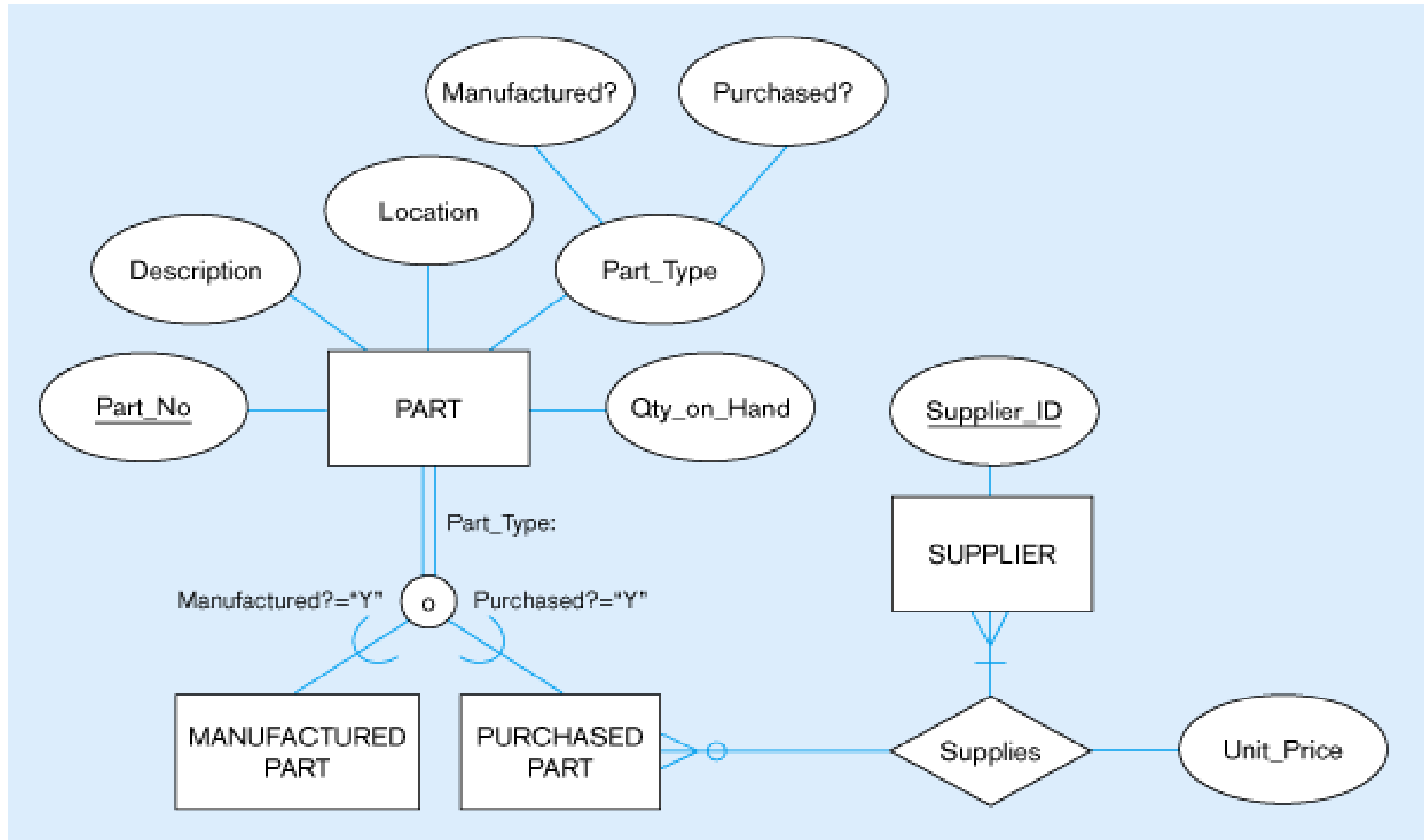
RESIDENT PATIENT



BED



Problem #8



Solution for Problem #8

