

# CGS 2545: Database Concepts Spring 2012

## Chapter 3 – In Class Exercises

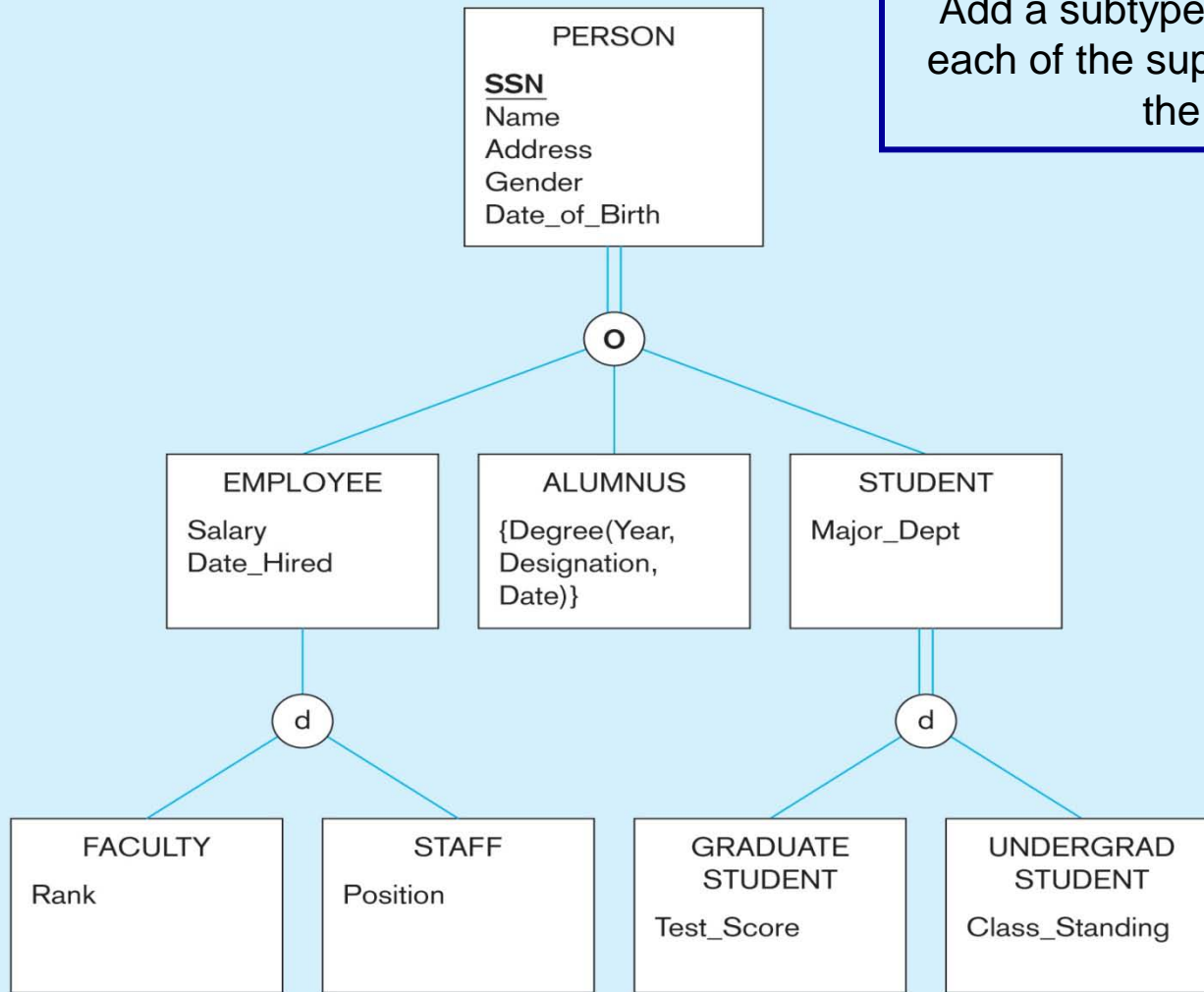
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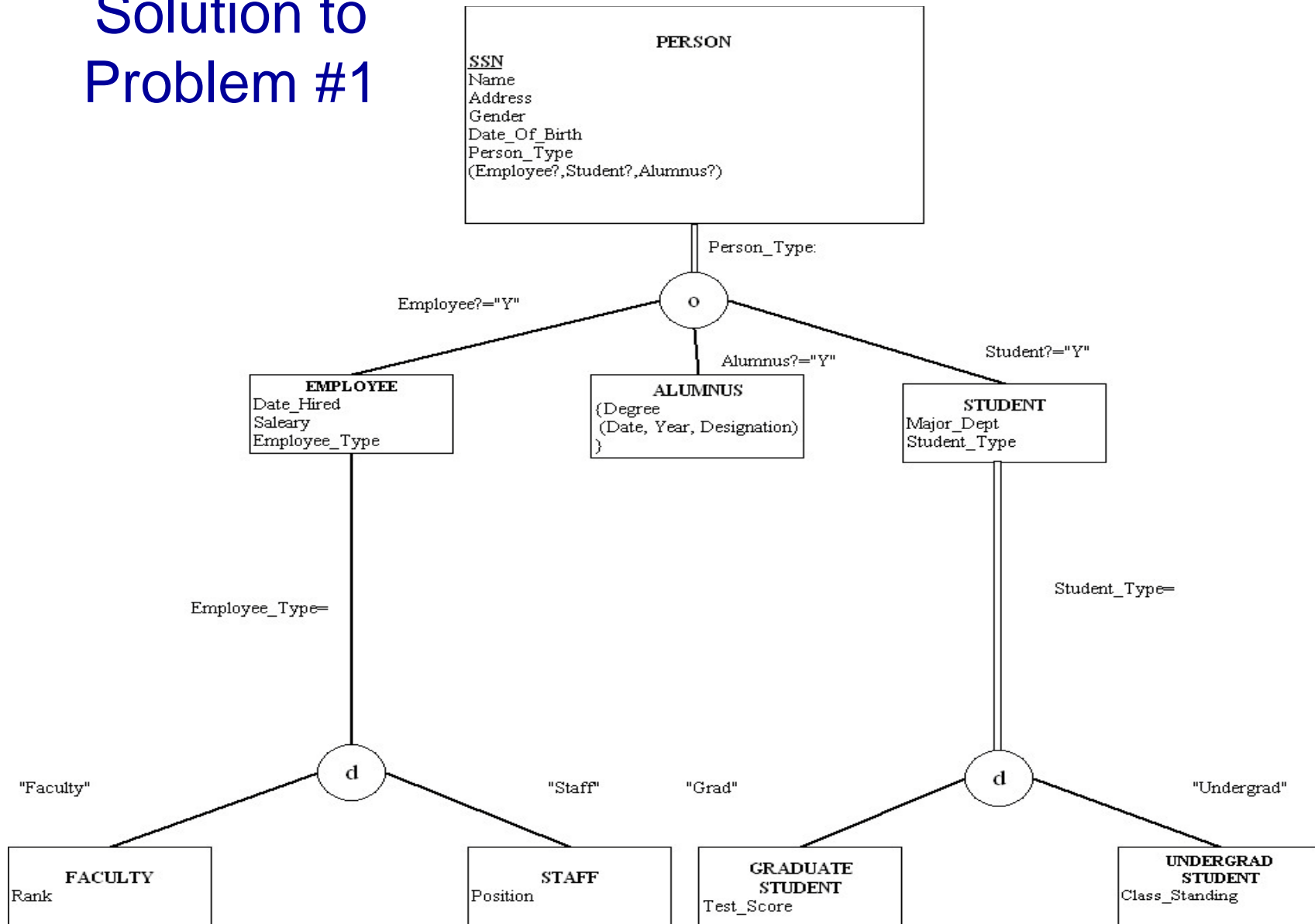


# Problem #1

Add a subtype discriminator for each of the supertypes shown in the ERD.



# Solution to Problem #1

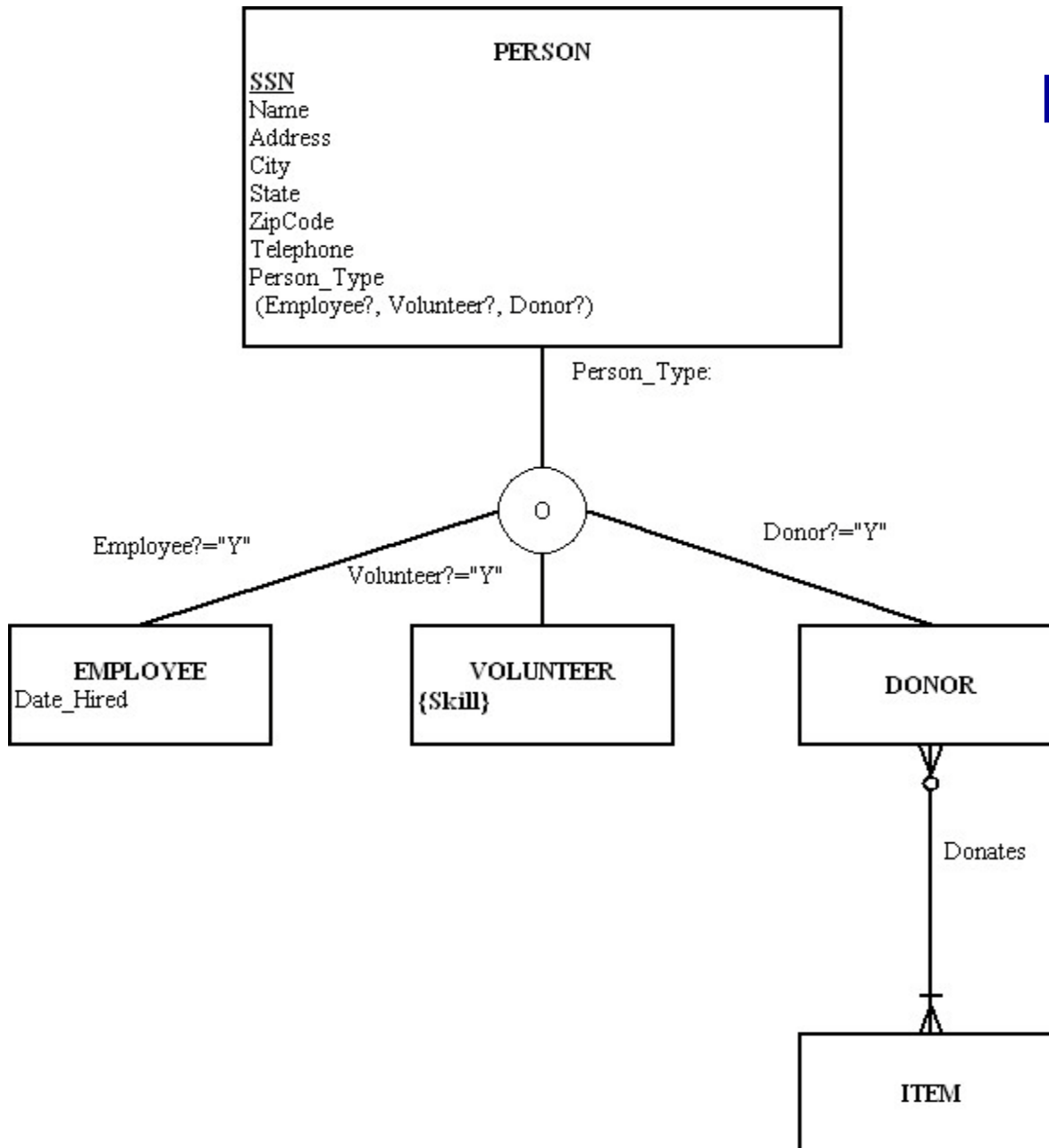


# Problem #2

- Construct an ERD for the following scenario:
- A nonprofit organization depends on a number of different types of persons for its successful operation. The organization is interested in the following attributes for all of these persons: SSN, Name, Address, City/State/Zip, and Telephone.
- Three types of persons are of greatest interest: employees, volunteers, and donors.
- Employees have only a Date\_hired attribute, and volunteers have only a Skill attribute (assume multi-valued). Donors have only a relationship (named Donates) with an Item entity type.
- A donor must have donated one or more items, and an item may have no donors, or one or more donors.



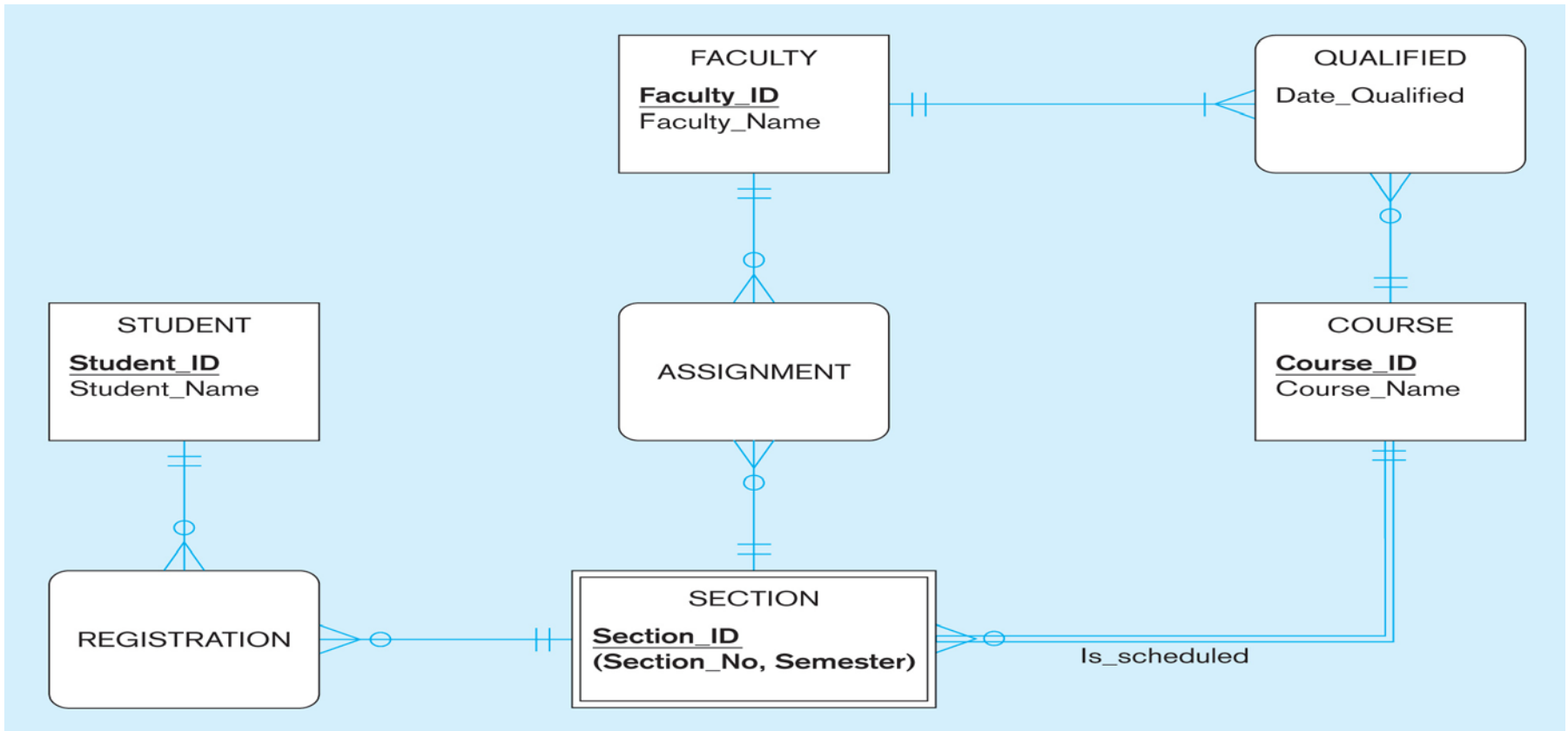
# ERD For Problem #2



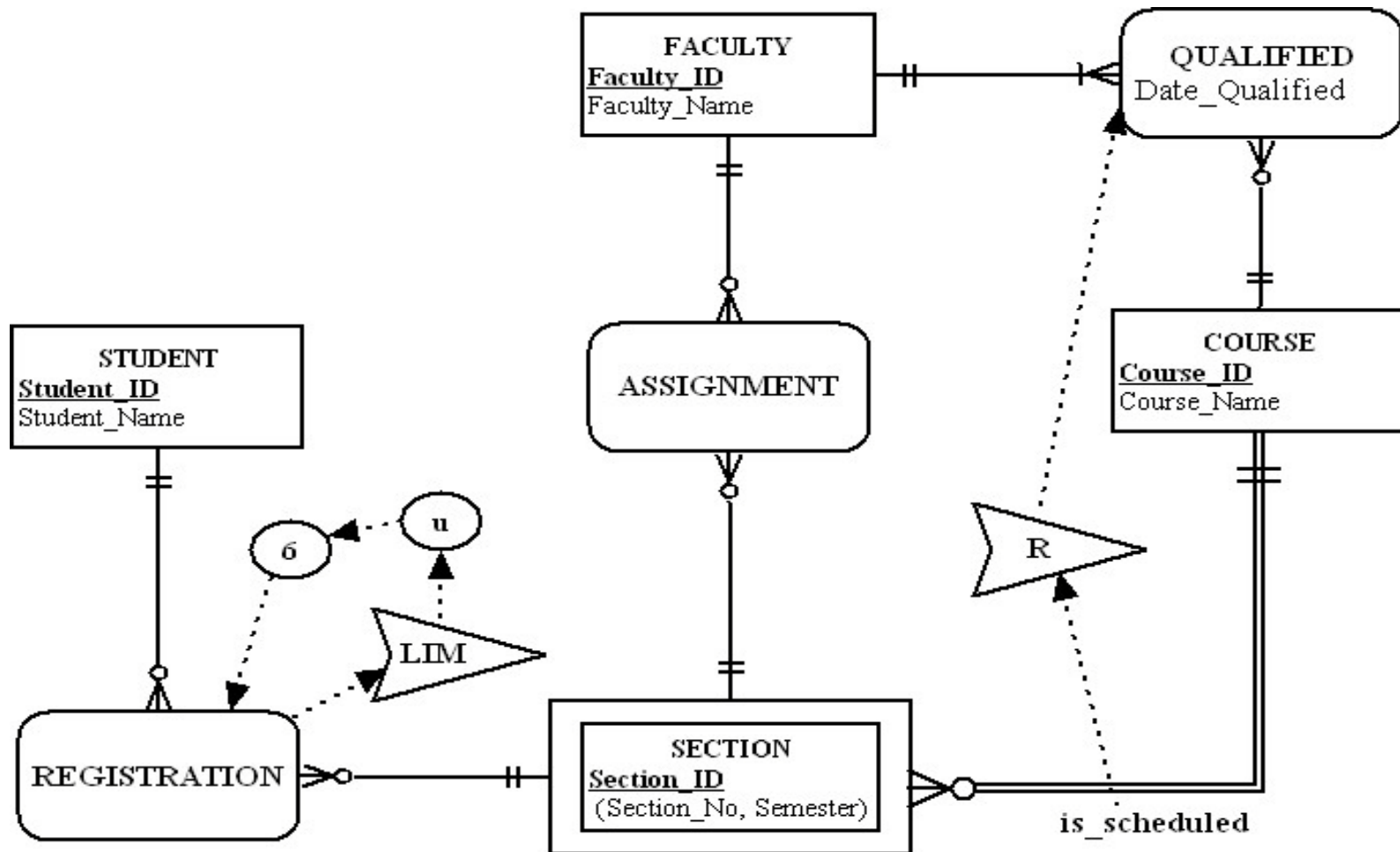
# Problem #3

Modify this ERD to incorporate the following business rules:

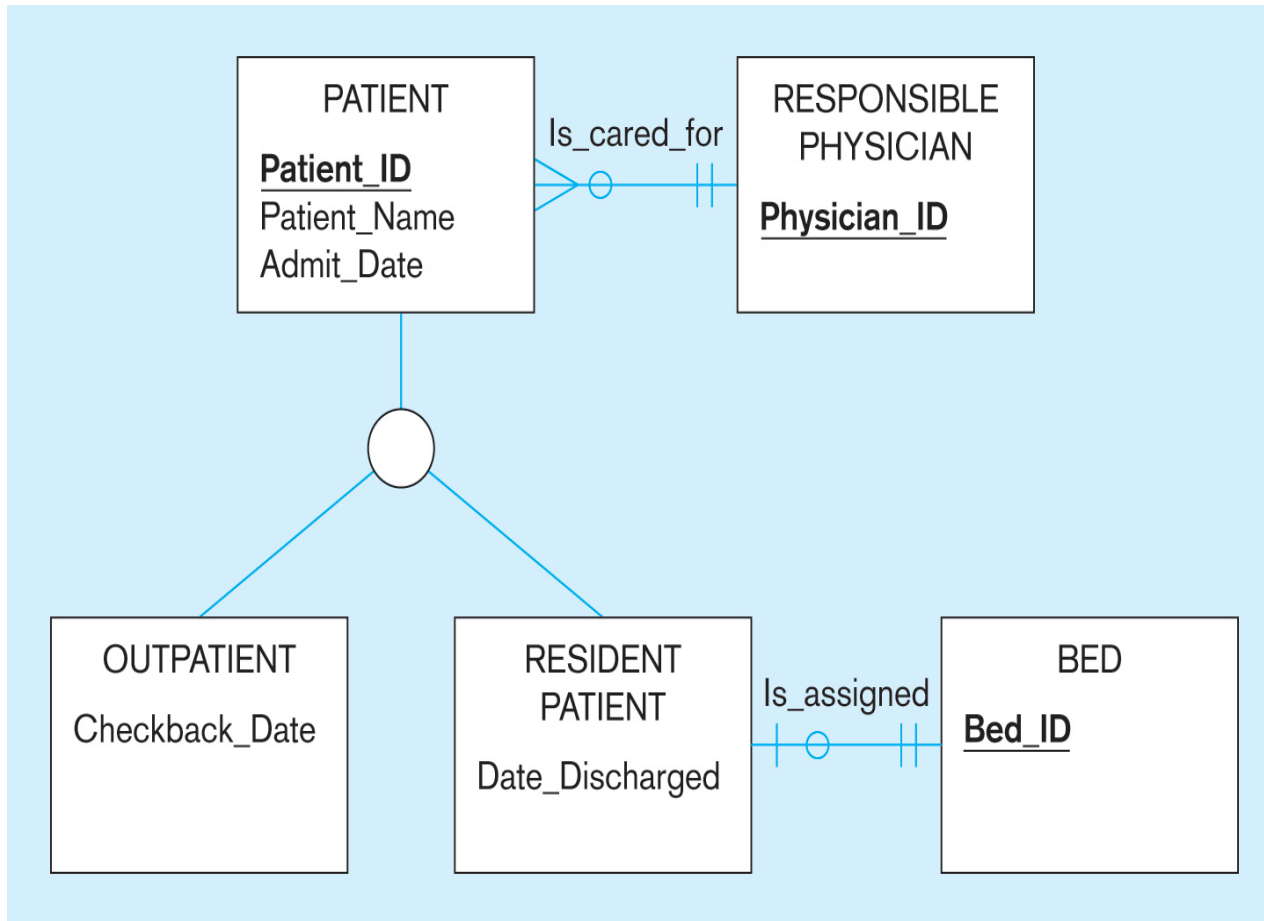
- 1: For a section of a course to be scheduled there must be a faculty member qualified to teach it.
2. For a student to register in a section of a course, that student must not be registered in a total of more than 6 courses sections.



# ERD For Problem #3



# Problem #4



Incorporate the following business rule into this ERD:

A resident patient can be assigned a bed only if that patient has been assigned a responsible physician.

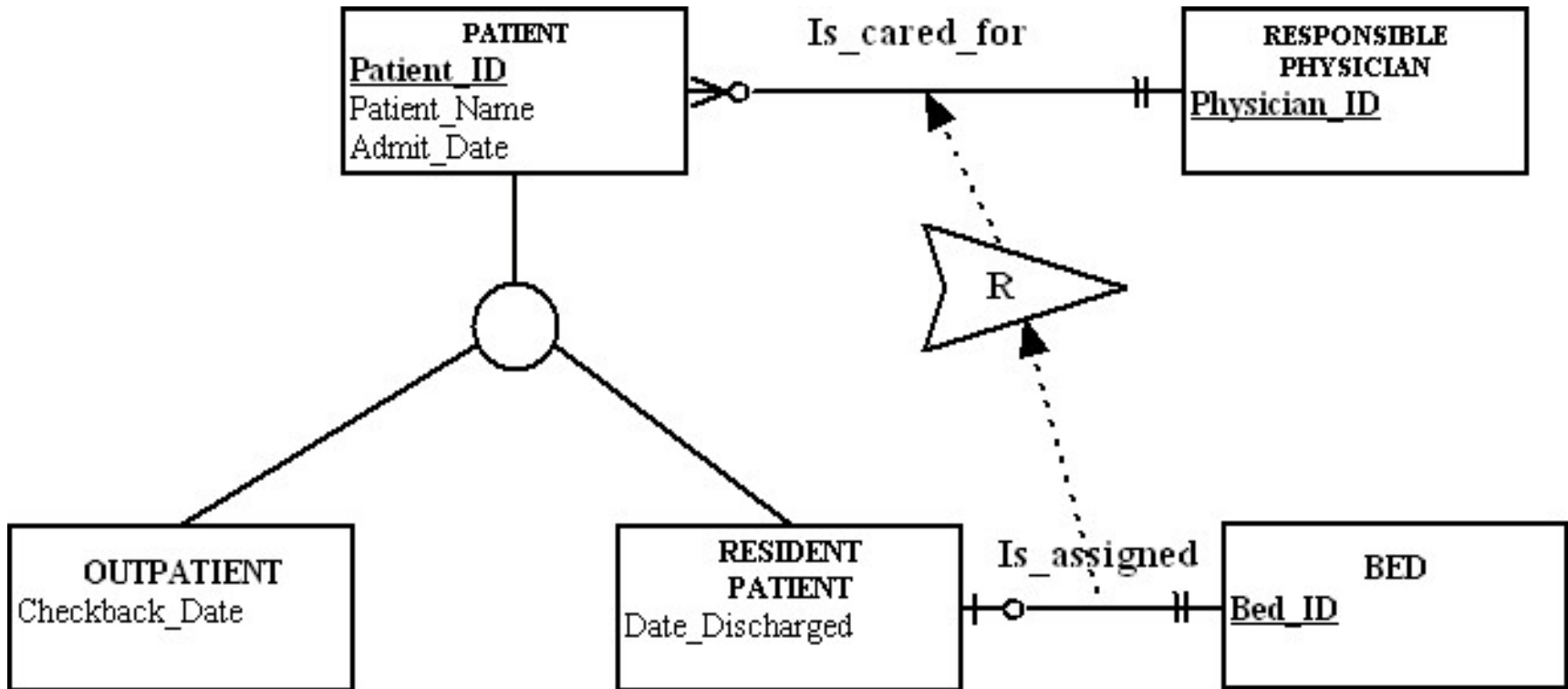
What is the anchor object?

What is the corresponding object?





# ERD For Problem #4



Anchor object: resident patient

Corresponding object: responsible physician

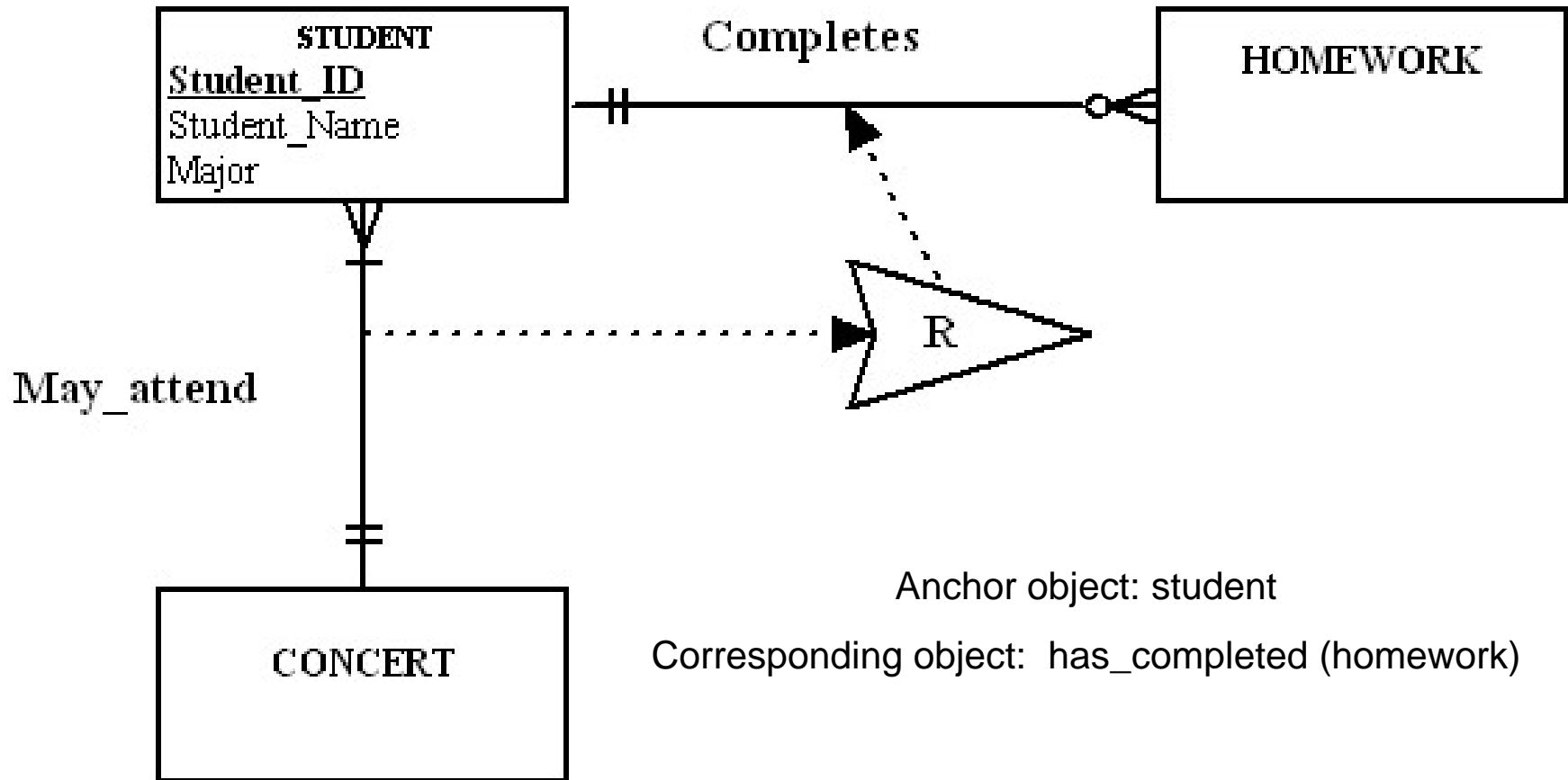


# Problem #5

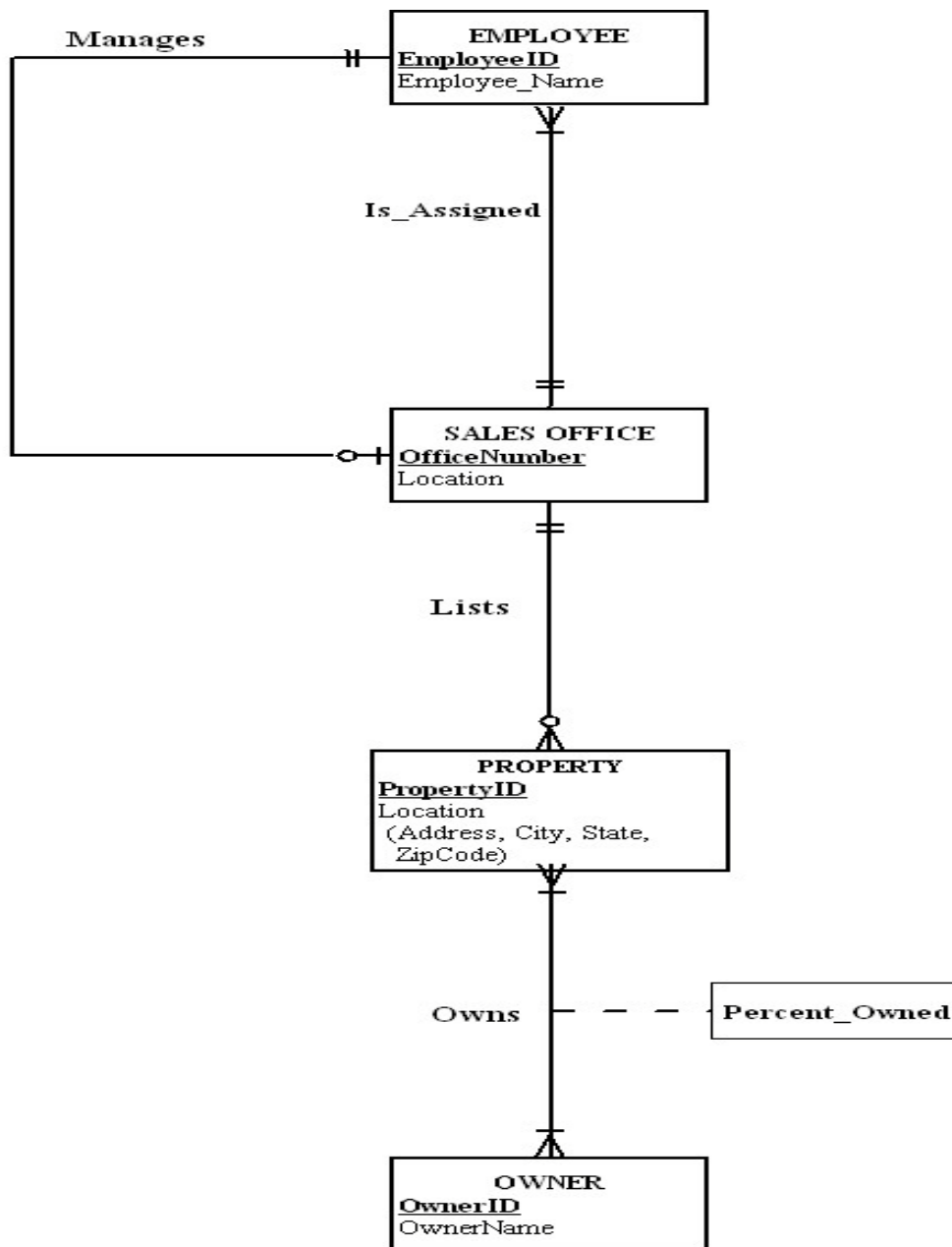
- Consider the following business rule: “A student may attend a concert only if that student has completed their homework assignment.”
- Draw an ERD that portrays the entities and relationships in this rule.
- Add the notation to incorporate this rule in the ERD.
- What is the anchor object?
- What is the corresponding object?



# ERD For Problem #5



# Scenario #6



Develop entity clusters for this ERD and redraw using the entity clusters



# ERD For Problem #6 Using Clustering

