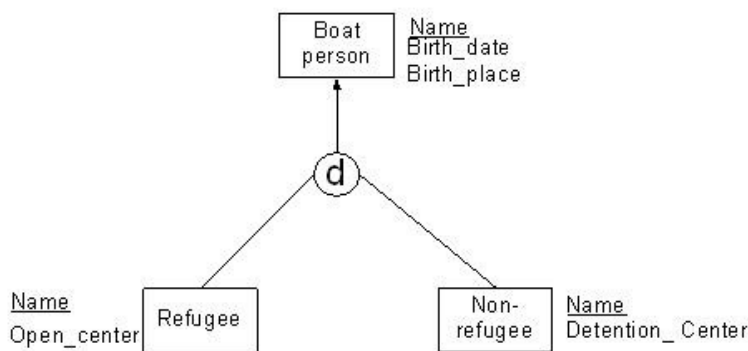


CS5483 Review Question 2

What are the major differences between Generalization and Categorization in terms of data volume (data occurrences) in their related superclass entity/entities and subclass entity/entities? Is there any special case such that these two data semantics can be overlapped?

Answer:

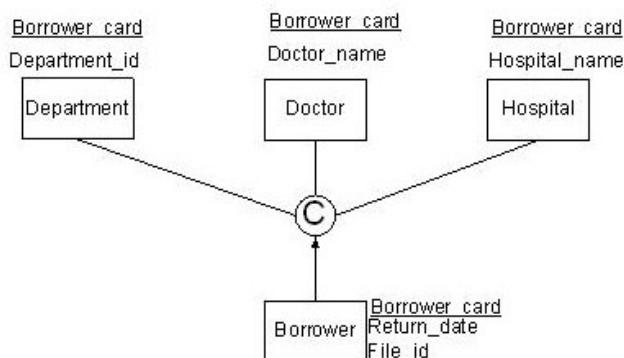
Multiple subclass entities can be generalized into a superclass entity provided that the data occurrences of the subclass entities reside in its superclass entity. For example, a refugee and a non-refugee can both be a boat person, but a refugee cannot be a non-refugee, and vice versa as shown in the following EER model.



ID: Refugee.Name \subseteq Boat_Person.Name

ID: Non-refugee.Name \subseteq Boat_Person.Name

A subclass entity is a subset of a union of its superclass entities such that the data occurrence of a subclass table must appear in one and only one superclass entity. For example, a patient record borrower can be a department, a doctor or a hospital in the following EER model:



ID: Borrower.Borrow_card \subseteq (Department.Borrower_card \cup Doctor.Borrower_card \cup Hospital.Borrower_card)

However, in case of equal number of subclass entities and superclass entities occur, there is an overlap between Generalization and Categorization such that either case can be true.