

Data Modeling: Logical Model

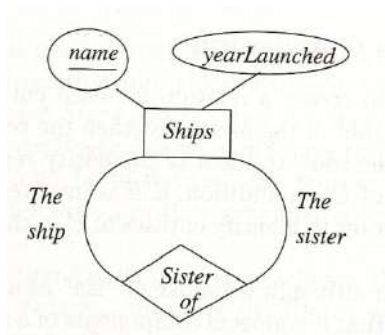
Exercise 1

Convert the following E/R diagrams to relational database schemas:

- The answer to exercise 1 of tutorial 1.
- The answer to exercise 3 of tutorial 1.

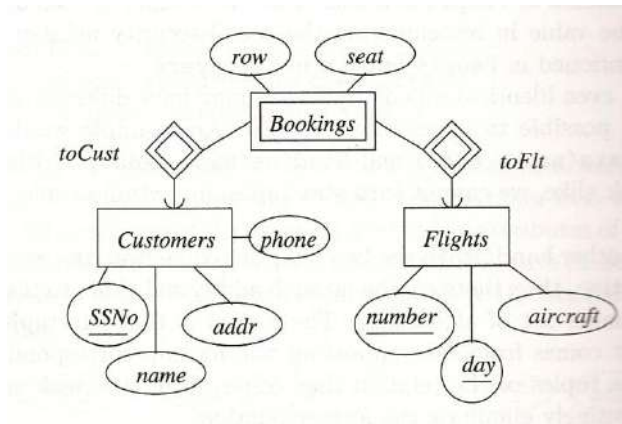
Exercise 2

The E/R diagram of the figure below represents ships. Ships are said to be sisters if they were designed from the same plans. Convert this diagram to a relational database schema.



Exercise 3

Convert the E/R diagram of the figure below to a relational database schema.

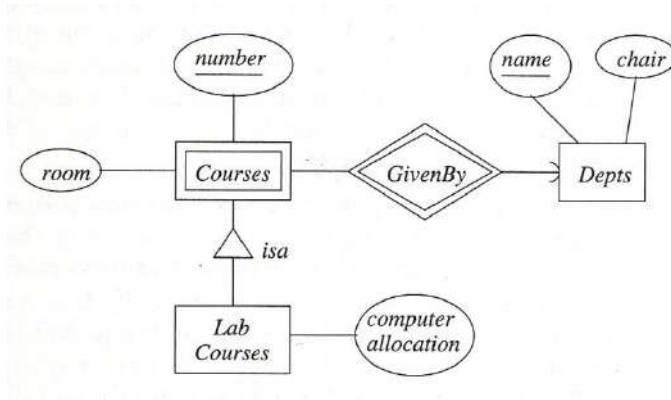


Exercise 4

There is another E/R diagram that could describe the weak entity set Booking in the diagram of exercise 2. Notice that a booking can be identified uniquely by the flight number, day of the flight, the row and the seat; the customer is not necessary to help identify the booking. (a) Revise the E/R diagram to reflect this new viewpoint. (b) Convert your diagram from (a) into relations. Do you get the same database schema as in exercise 2?

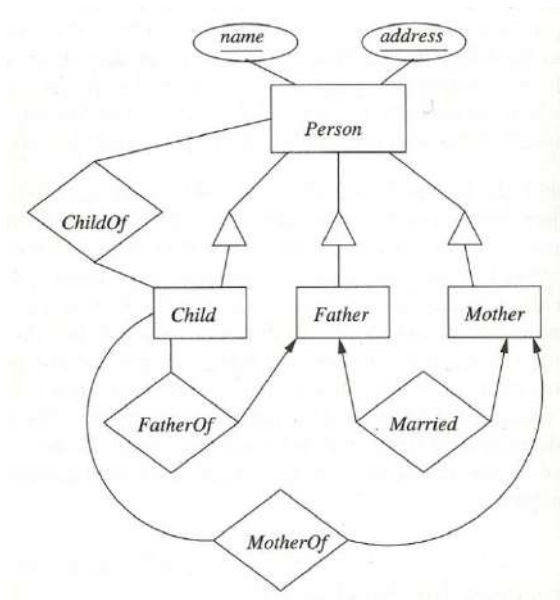
Exercise 5

Convert the E/R diagram of the figure below to a relational database schema, using each of the following approaches: (a) the nulls method, (b) the E/R method, (c) the object-oriented method.



Exercise 6

Convert the E/R diagram of the figure below to a relational database schema, using each of the following approaches: (a) the nulls method, (b) the E/R method, (c) the object-oriented method.



Exercise 7

Convert the following relational schemas back to their equivalent E/R diagram:

a- Schema 1:

Employees(ssno, name, address)

Departments(id, address, #manager), manager references Employees.name

HasWorkedFor(#ssno, #id, since, until)

b- Schema 2:

Products(id, name, manf, price)

Clothes(#id, size)

Food(#id, expdate)