Homework

In Fig. 2.14 (see below) is an E/R diagra for a bank database involving customers and accounts. Since customers may have several accounts, and accounts may be held jointly by several customers, we associate with each customers an “account set”, and accounts are member of one or more account sets. Assuming the meaning of the various relationships and attributes are as expected given their names, criticize the design. What design rules are violated? Why? What modifications would you suggest?

Fig. 2.14

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#### Homework

2.3.2: We can think of relationships in the E/R model as having keys, just as entity sets do. Let R be a relationship among the entity sets E₁,...,Eₙ. Then a key for R is a set K of attributes chosen from the attributes of E₁,...,Eₙ such that if the two tuples (e₁,...,eₙ) and (f₁,...,fₙ) are two entities of R then it is not possible for the two tuples to agree on every attributes belonging to K. Now suppose that R is a binary relationship. Let K₁ and K₂ be a key for the entity sets E₁ and E₂, respectively. In term of E₁ and E₂, give a smallest possible key for R under the assumption that

a. R is many-many.
b. R is many-one from E₁ to E₂.
c. R is many-one from E₂ to E₁.
d. R is one-one.

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2.4.4: Draw E/R diagram for the following situations involving weak entity sets. In each case indicate keys for entity sets:

a. Entity sets Courses and Departments. A course is given by a unique department, but its only attribute is number. Different departments can offer courses with the same number. Each department has a unique name.
b. Entity sets Leagues, Teams, and Players. League names are unique. No league has two teams with the same name. No team has two players with the same number. However, there can be players with the same number on different teams, and there can be teams with the same name in different leagues.