CS-317 Data Management and Information Processing
Spring 2003

Quiz 1 Solutions

Problem 1
The ER model does not specify the following:

- Type of the attribute
- Restriction, if any, on the domains of the attributes

These require separate textual specification.

Problem 2
Cardinality constraint determines the number of instances from each entity class that can participate in a given relationship. The types of cardinality constraints that a relationship can have are:

- One-to-one
- One-to-many
- Many-to-one
- Many-to-many

Problem 3
Weak entity set is one which cannot exist by itself. In other words, for each instance of the weak entity set, there must exist an instance of a strong entity set which is related to it. The attributes of a weak entity set cannot constitute a key.

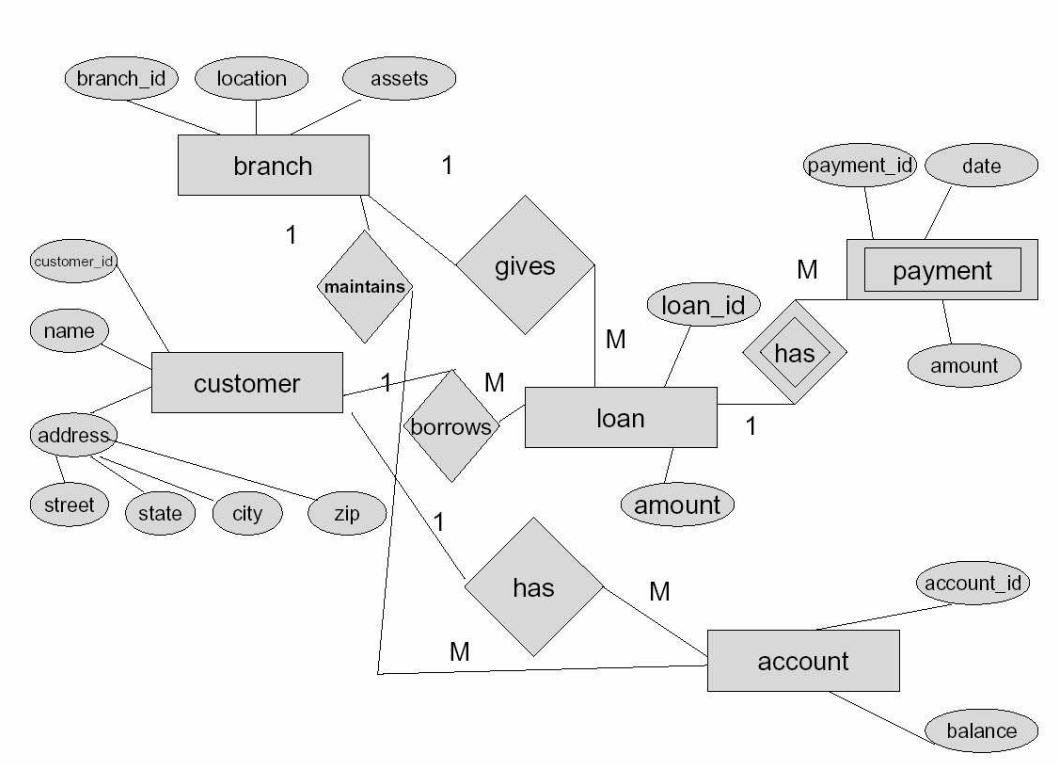
Problem 4
(a)
No. There is no requirement in the diagram that a student take a section in order to complete a course.

(b)
Yes! The relationship is one to many.

(c)
Yes! It is not a weak entity class

Problem 5

Following is the ER diagram for the requirements specification given in the problem statement:



Problem 6

To capture the 0ne-to-many relationship, we put the key of "one" part (that entity) as an additional attribute in the schema describing the entity of the "many" part (entity). For example:

Loan (loan_id, amount, branch_id)

Branch (branch_id, location, assets)