From ER Diagram to Database Schema
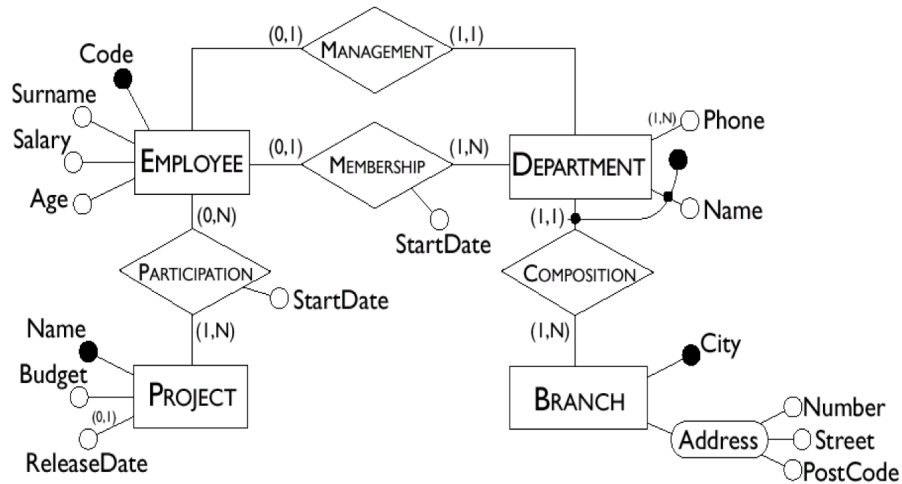
1. Consider the following ER diagram:

(a) Name a weak entity set in this diagram.

(b) What attributes form a key for this entity set?

(c) Can a department exist without a manager?

(d) How many departments can an employee belong to?

(e) Find an example of each of these kinds of relationship, if there is one.

   A one-to-one relationship:

   A one-to-many relationship:

   A many-to-many relationship:

(f) Find an example of each of these, if there is one.

   A ternary relationship:

   A recursive relationship:

2. Translate the ER diagram into a relational schema without making any simplifications. That is, create one relation for every entity set and one relation for every relationship set. Underline the key of each relation, and draw arrows to indicate foreign keys.

3. Which relationship sets represent information that can be collapsed onto an entity set? Revise the schema accordingly.