Advanced Mapping

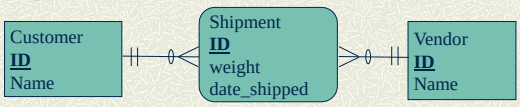
Basic ER Mapping:
- Strong/Weak Entities
- Relationships
- Simple and Multivalued Attributes

Missing:
- associative entities
- complex/derived attributes
- EER features
- constraints

Associative Entities

- Deal with an associative entity as if it were a M:N relation
- If associative entity does have a key, use it (rather than using the combination of foreign keys)

Example



Derived and Complex Attributes

- Turn derived and complex attributes into stored procedures: SQL statements that can be performed to compute them (in Microsoft Access: 'Queries')

Examples
- Name of employee (derived)
- Age of employee (complex)
- Number of employees in department (derived)

Constraints

Key constraints
- translate into uniqueness constraints (typically requires index)

Domain constraints
- translate into check constraints or assertions

Other Business Rules
- translate into check constraints or assertions; if that's not possible, translate into triggers

Examples
employee sex is 'M' or 'F' (or null)
employee ssn is unique

EER Mapping

• Super- and subentities are just entities, so you have already mapped them like regular entities.

• To every superentity add a discriminator (type) field
for (d)isjoint: categories of subentities,
for (o)verlap: taxonomy, so use multi-valued attribute

continued

EER Mapping

• Add primary key of superentity to each of its subentities as candidate key.

• The new primary key of every subentity also is a foreign key referencing the primary key of the superentity.

• For (d)isjoint subentities, add an assertion or trigger forcing disjointness

Note: there are other solutions

Examples
employee(technician, secretary,engineer)

Summary

1. Map entities, first strong entities, then weak entities owned by already mapped entities, and so on. Map multi-valued and derived and complex attributes.
2. Map relationships, first 1:1 and 1:M, then M:M.
3. Add constraints for business rules and EER parts.

Examples

- Banker's miniworld