Enhanced Entity-Relationship (EER) Modeling

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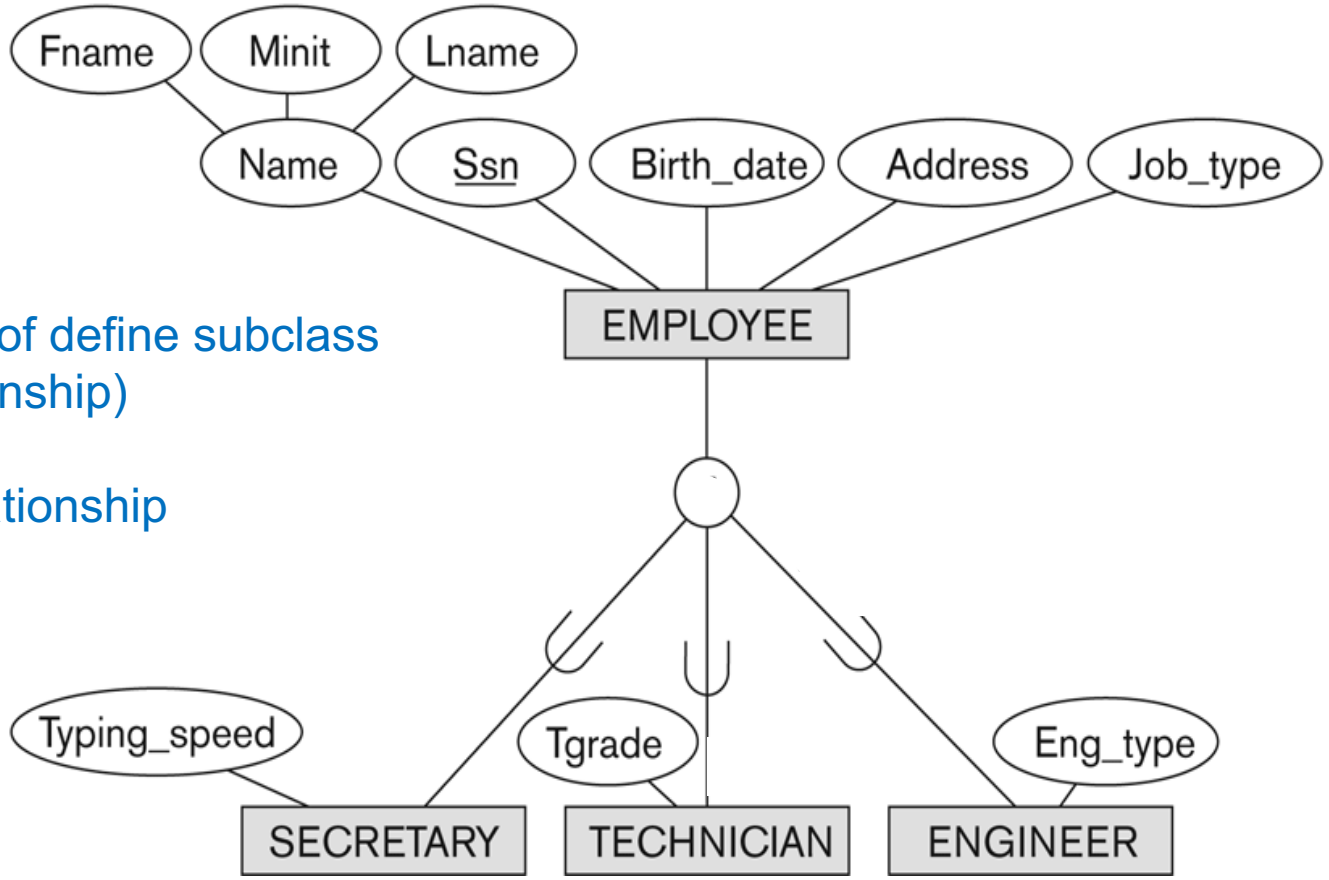
Subclasses and Superclasses Specialization

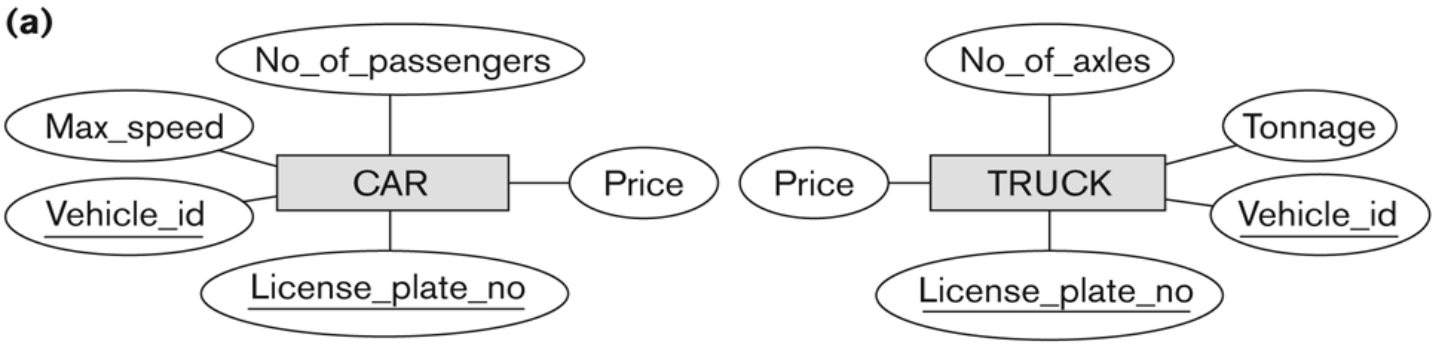
- Specialization: process of define subclass
- ⊂: subtype (IS_A relationship)
- Subclass inherits:
  all the atrtibutes + relationship
  of a superclass



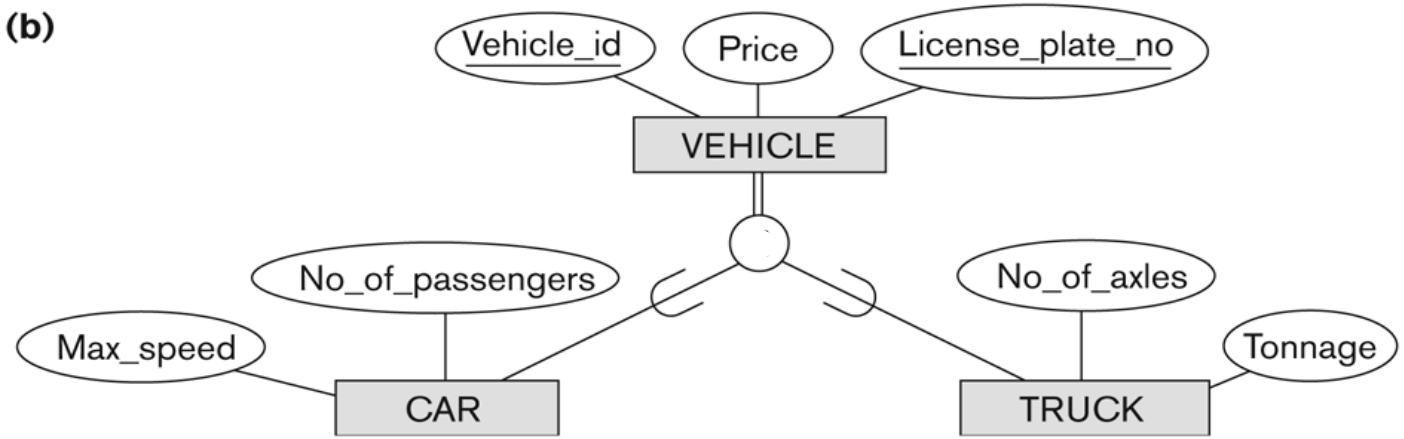
Generalization

- Specialization: process of define subclass
- Generalization: **reverse** of specialization. Several classes with common features generalize into a superclass

ER=>

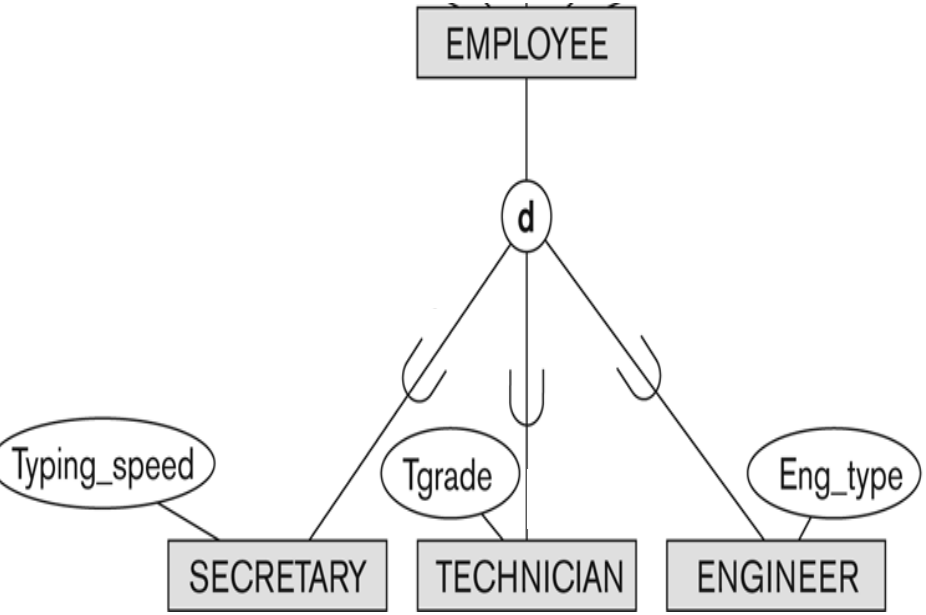


EER=>

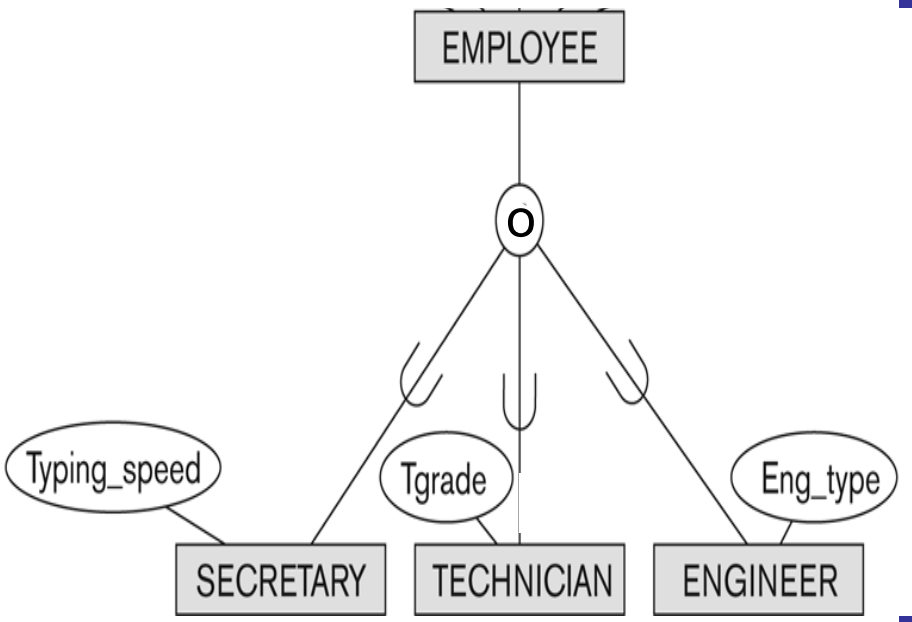


Disjointness Constraint

Disjoint (d): an *entry* IS_A member of at most one subclass

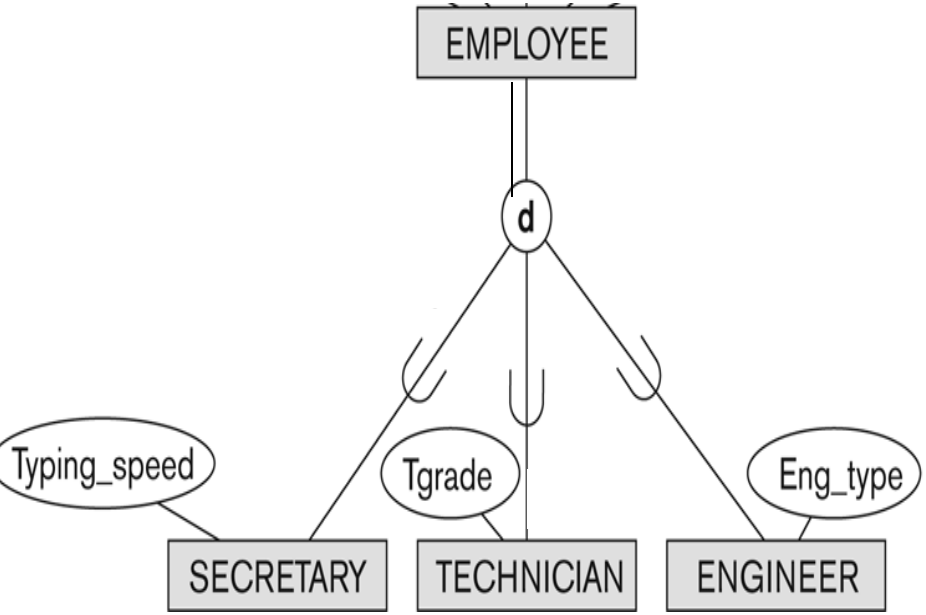


Overlapping (o): an *entry* IS_A member of one or more than one subclass

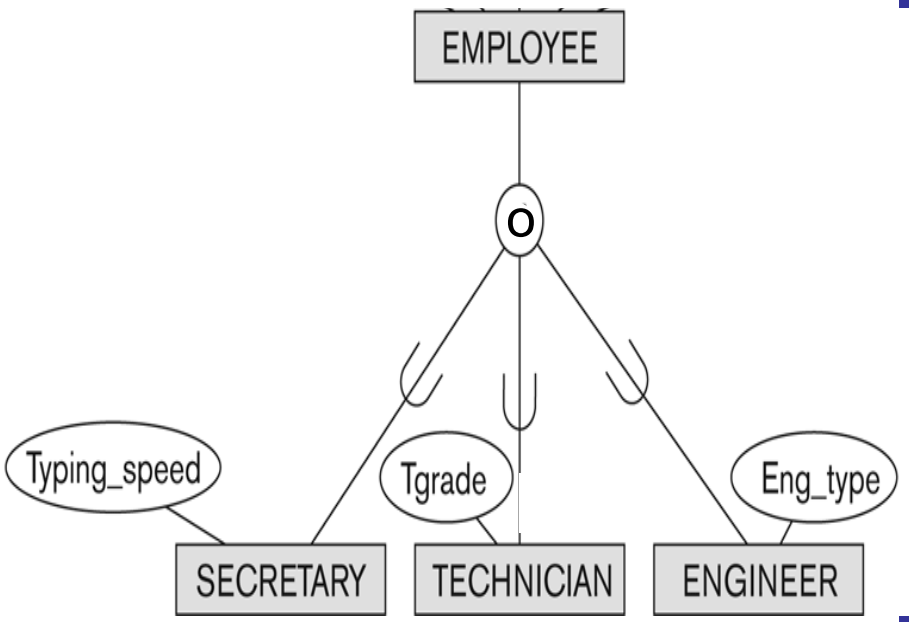


Completeness Constraint:

Total : every entry is a part of subclasses

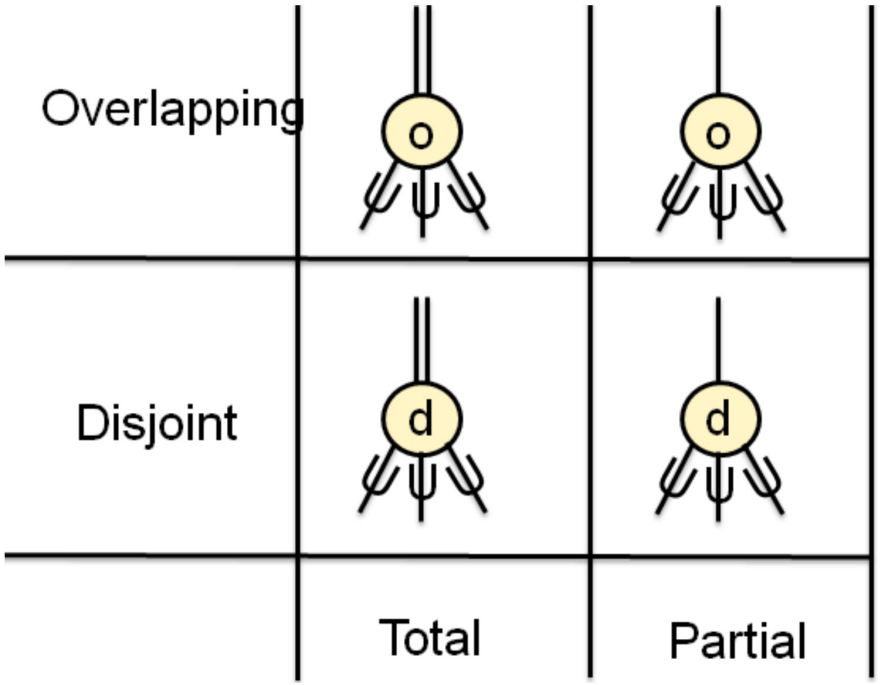


Partial: not every entry is a part of subclasses

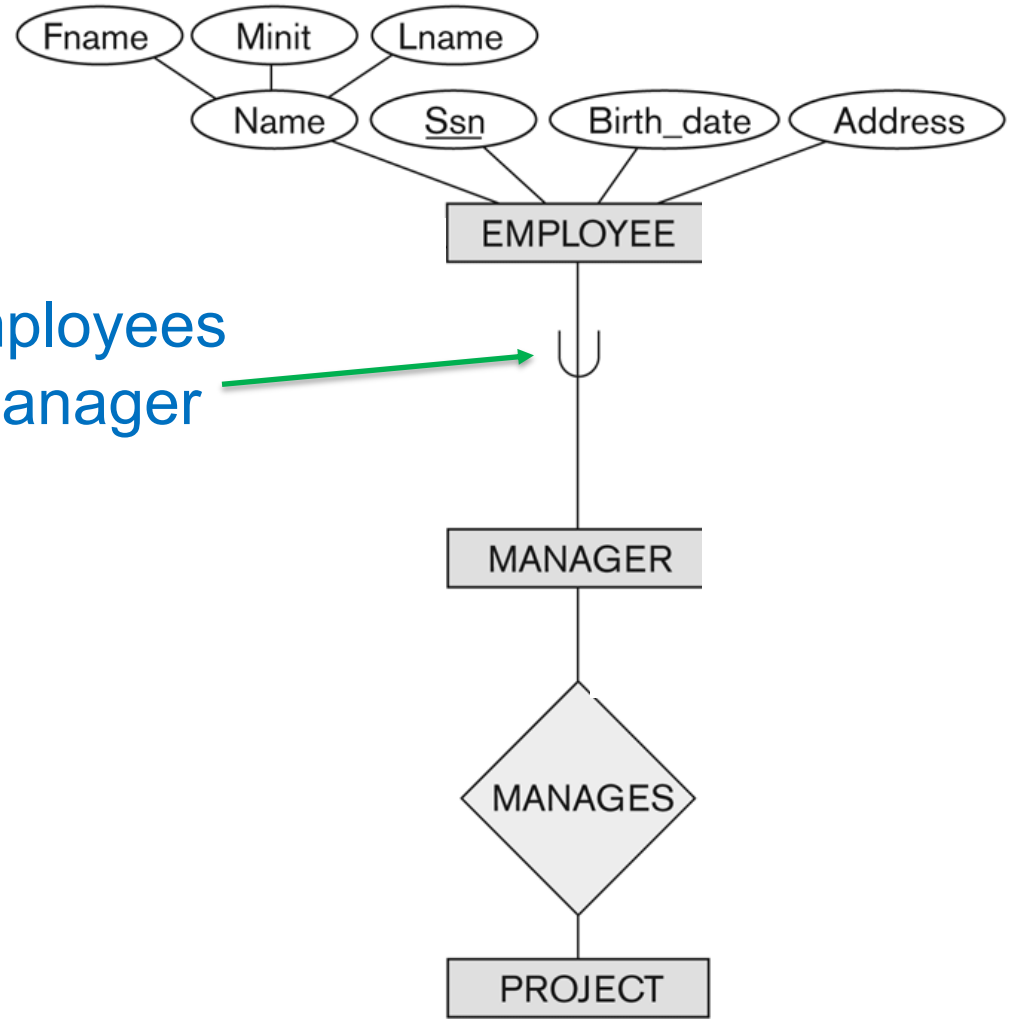


Summery of Constraints on Specialization and Generalization

- Four types of specialization/generalization:
  - Disjoint, total
  - Disjoint, partial
  - Overlapping, total
  - Overlapping, partial



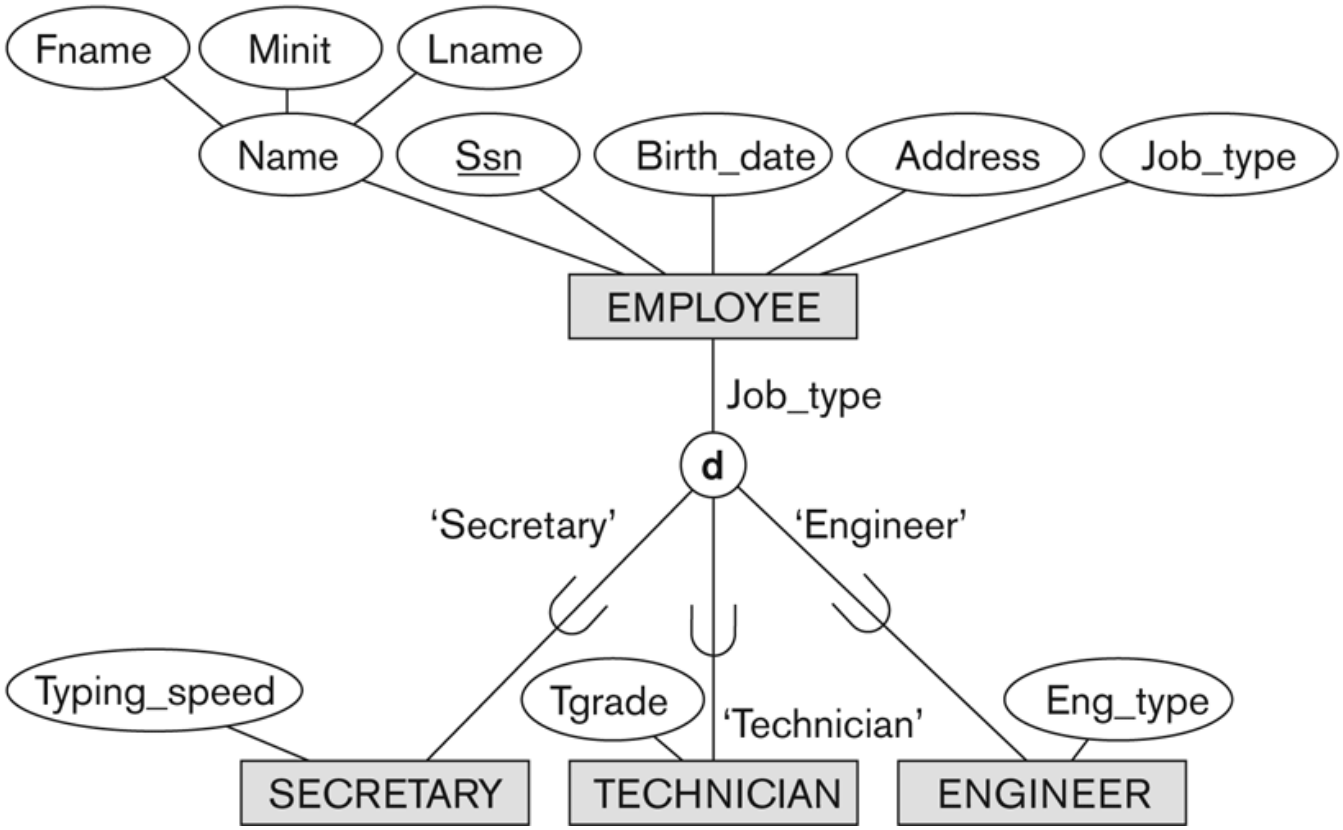
Subset without Specialization



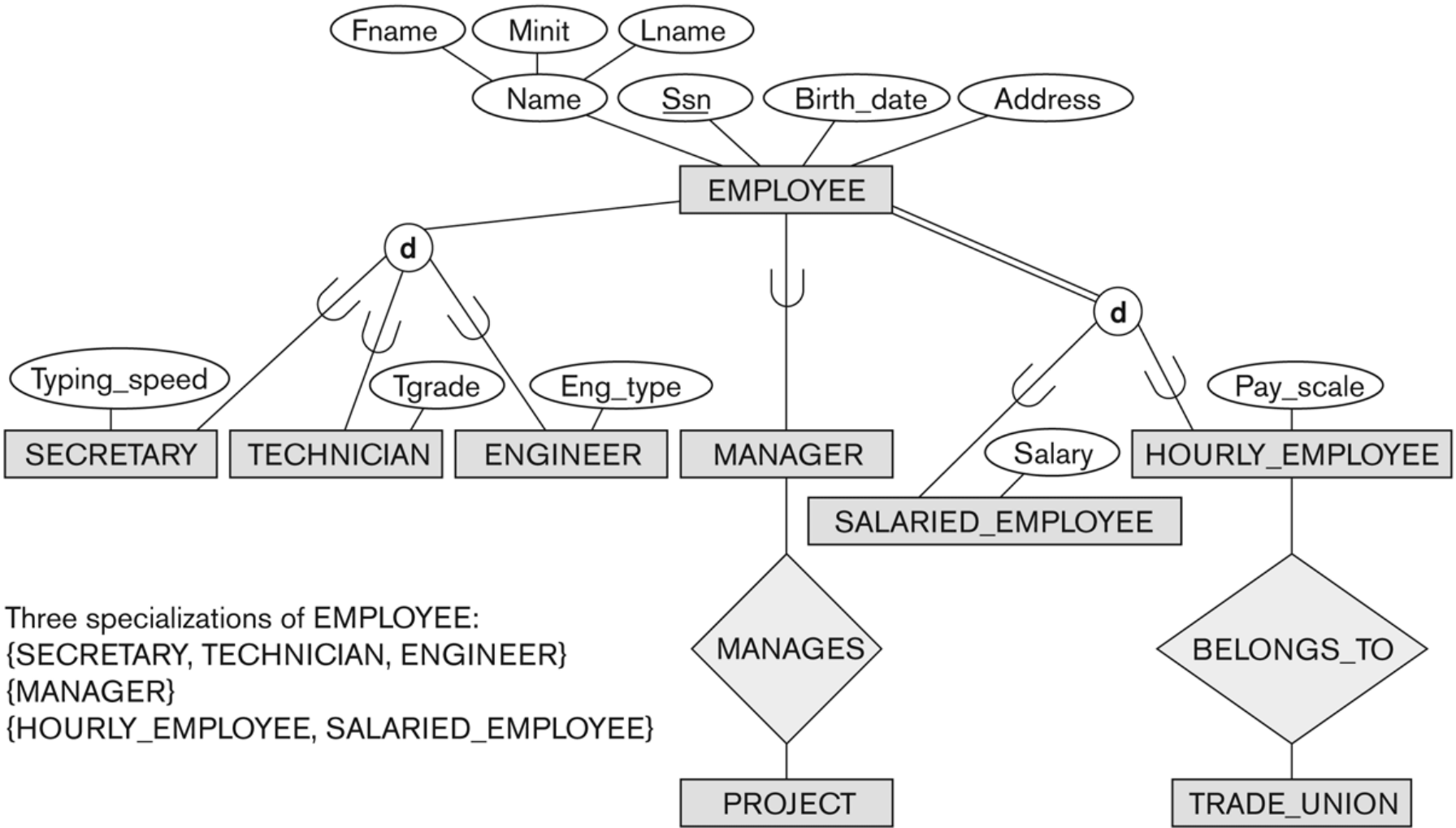
Some of employees are manager

Attribute-defined Specialization

Specialization is based on *job_type*



Putting it together



Summary

- EER = ER + the following:
  - Class/subclass relationships
  - Specialization and generalization
  - Inheritance
- We have not covered UNION concept
  - DIY

Published: Ex-2-EER Diagrams.pdf

Full slide from book authors:

Chapter04.pdf