Mapping the EERM to the Relational Model

Mapping the EER Model Concepts to Relations

- Specialisation class/subclass relationship
- Shared subclass
- Categories

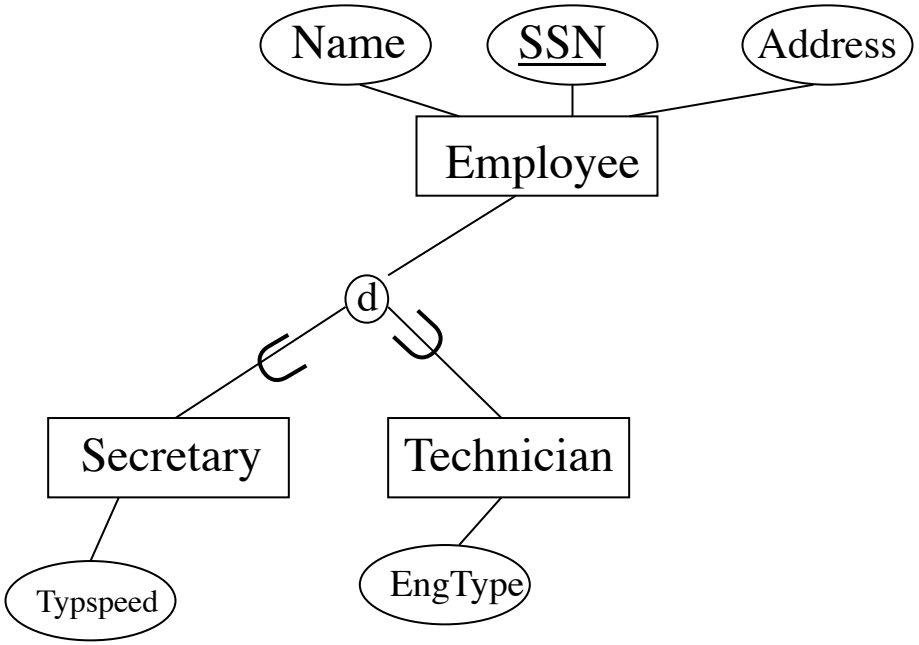
Specialisation Class/Subclass Relationship [1]

- Multiple relation option

Employee(SSN, Name, Address)

Secretary(SSN, TypingSpeed)

Technician(SSN, EngType)



- Single relation option

Employee(SSN, Name, Address, TypingSpeed, EngType)

  - Disjoint subclasses
  - Use null values
  - Not recommended if many specific attributes defined for the subclasses

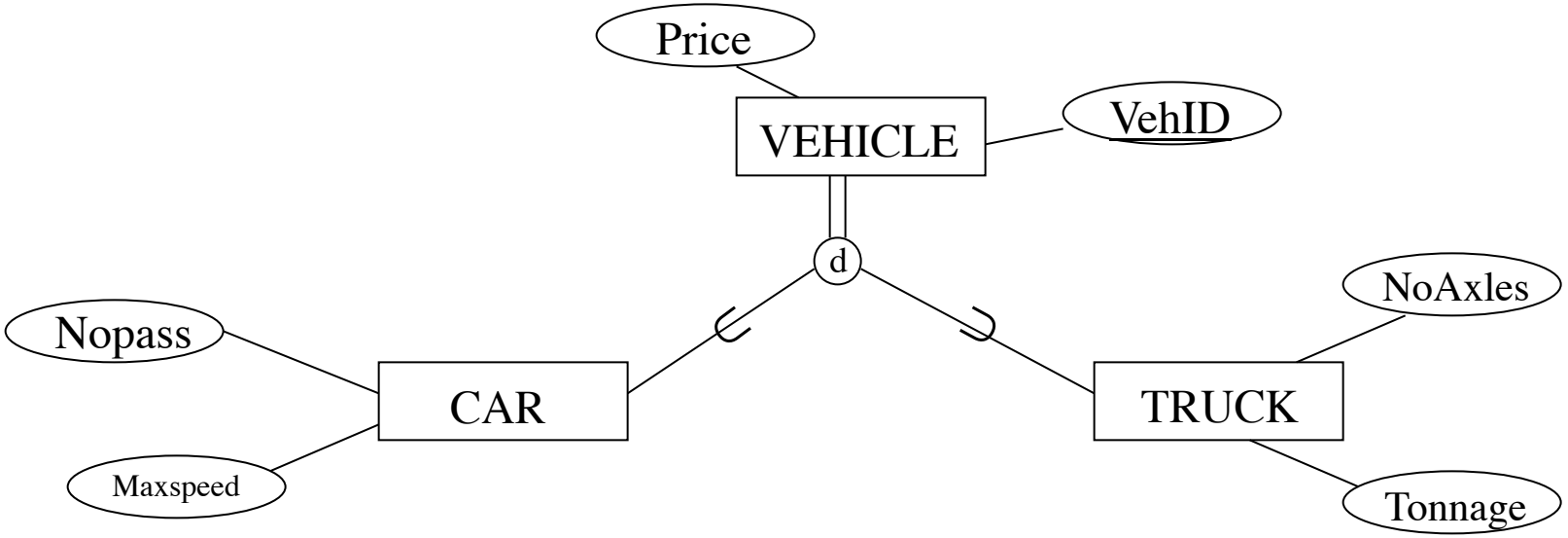
Specialisation Class/Subclass Relationship [2]

- Multiple relation option

Car(VehicleID, Price, MaxSpeed, NoPassengers)

Truck(VehicleID, Price, NoAxles, Tonnage)

Total and disjoint must hold (note: diff names in conceptual and logical; ok)

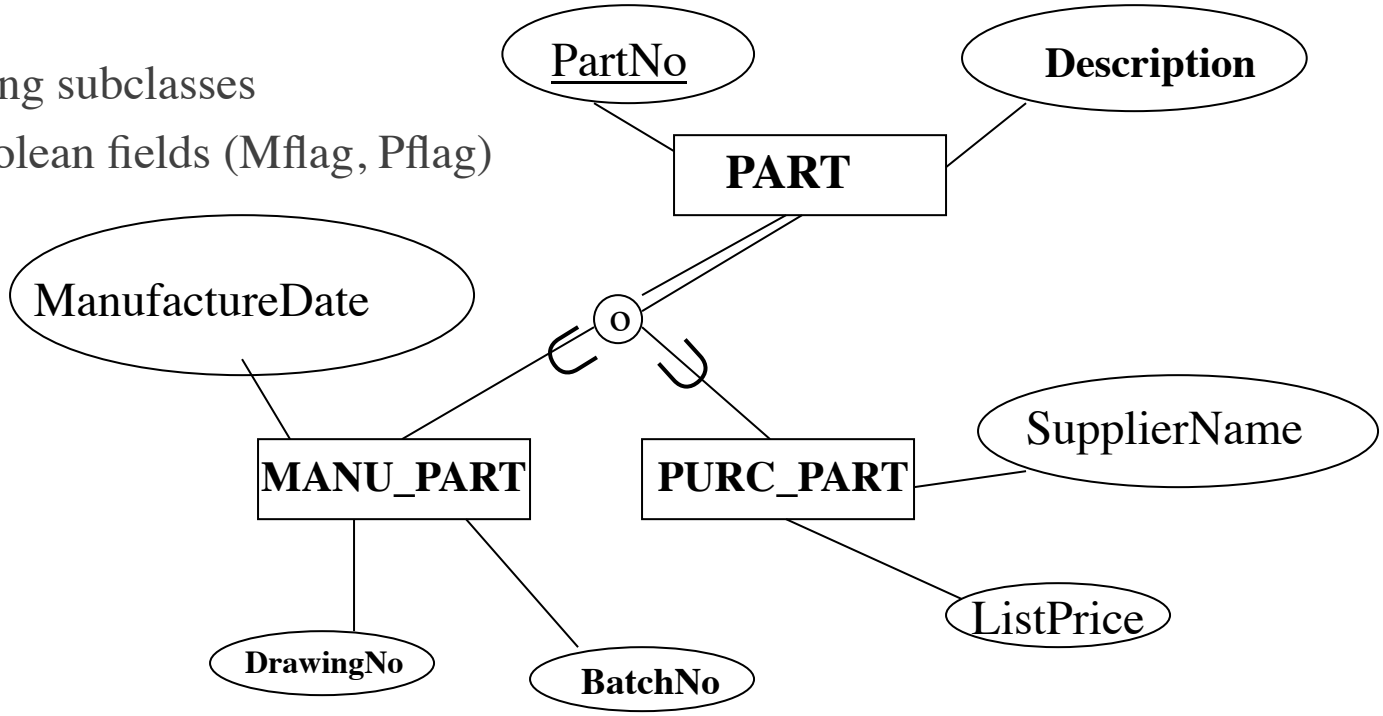


Specialisation Class/Subclass Relationship [3]

- Single relation option

Part(PartNo, Description, Mflag, ManufactureDate, DrawingNo, BatchNo, Pflag, SupplierName, ListPrice)

  - Overlapping subclasses
  - Use of boolean fields (Mflag, Pflag)



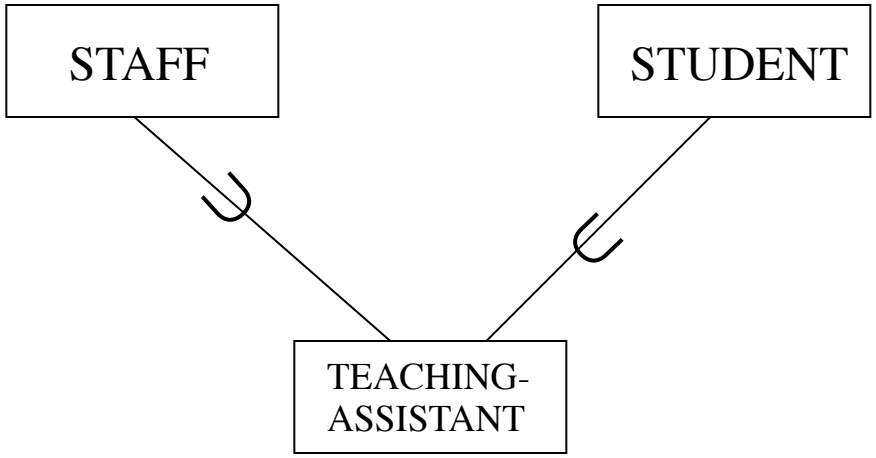
Shared Subclass

EMPLOYEE(SSN, Salary, Position, Rank)

STUDENT(SSN, MajorDept, DegreeProgramme)

TEACHING_ASSISTANT(SSN)

Or use flags in EMPLOYEE and STUDENT



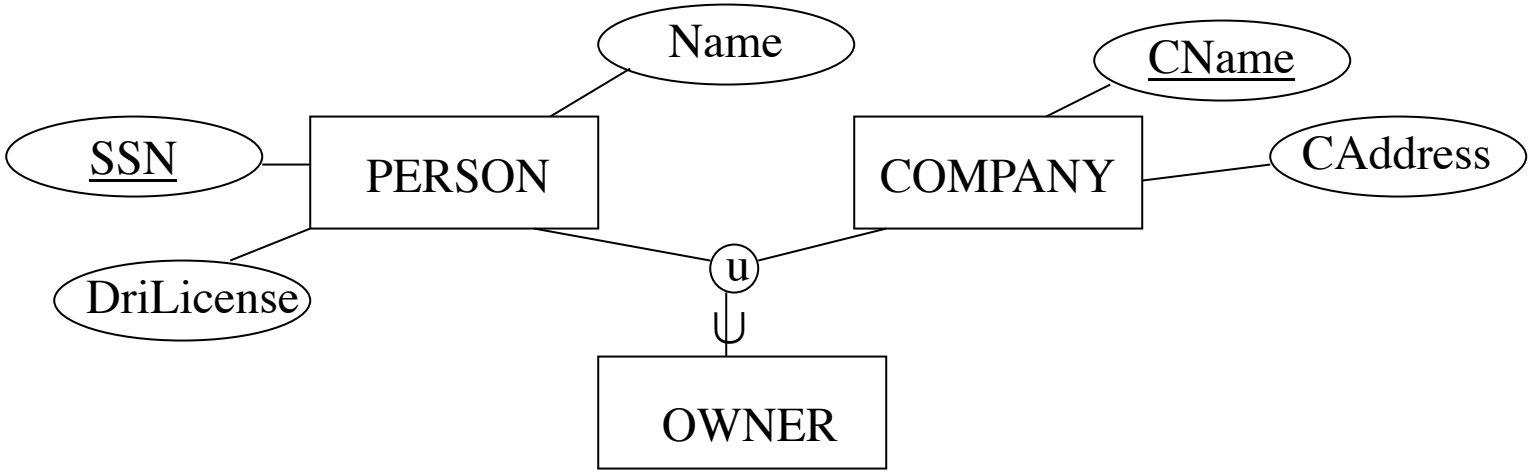
Categories

PERSON(SSN, DrivingLicense, Name, OwnerID)

COMPANY(CName, CAddress, OwnerID)

OWNER(OwnerID, OwnerType)

OwnerID is called a surrogate key; null value?



Summary

- Subclass/Superclass Relationship; a special relationship!
- Multiple Relation and Single Relation approach
- Implementation details: shared keys or flags
- Participation constraint (e.g. disjoint vs overlapping) can guide the mapping