EER → Relational: Specialization

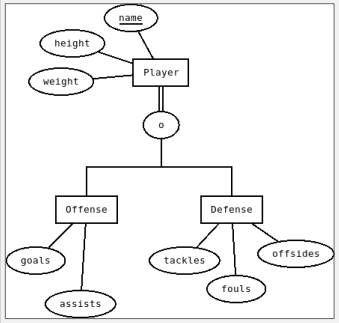
Specialization → one of four options

- *multiple relations*
  - *superclass and subclass* – superclass relation has attributes of its entity type (PK = entity type's key); subclass relations have attributes of their entity types plus PKs of the superclass relation (as FK; PK = superclass PK)
  - *subclass only* – subclass relations have attributes of their entity types and of the superclass entity type (PK = superclass key)
- *single relation* – single relation with attributes from superclass and all subclasses (PK = superclass key)
  - *single type attribute* – plus a single type attribute which identifies which subclass an entity belongs to
  - *multiple type attributes* – plus a boolean type attribute for each subclass

EER → Relational: Specialization

8. specialization → one or more relations

		type of specialization				
		partial	**total**	**disjoint**	**overlap**	
multiple relations	**superclass and subclass**	y	y	y	y	
	subclass only	X	y	y	entities may be duplicated	
single relation	**single type attribute**	y	y	y	X	subclass-only attributes result in NULL values
	multiple type attributes	y	y	inconsistency potential	y	



Player(name,height,weight)
Offense(goals,assists,name)
Defense(tackles,fouls,offsides,name)

- Offense.name -> Player.name
- Defense.name -> Player.name

Offense(goals,assists,name)
Defense(tackles,fouls,offsides,name)

multiple classes (subclass) should also have height, weight for both relations – redundant info for players who are both

Player(name,height,weight,goals,assists,tackles,fouls,offsides,position)

single relation (single type attribute) can't accommodate players who are both

Player(name,height,weight,goals,assists,tackles,fouls,offsides,isOffense,isDefense)

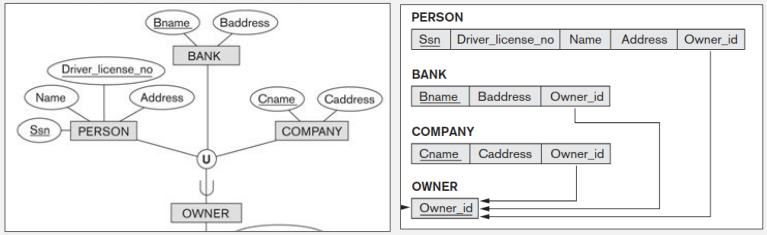
total specialization with overlap → multiple classes (superclass and subclass) and single relation (multiple type attributes)

EER → Relational: Category Types

9. category types → relation with any attributes of the category itself plus the surrogate or superclass key (as FKs in the superclasses)

   surrogate/superclass key → primary key

   (surrogate key is added to superclasses if they do not have a common key)


Bname
Baddress
BANK
Driver_license_no
Name
Address
Cname
Caddress
Ssn
PERSON
COMPANY
U
OWNER

PERSON
Ssn
Driver_license_no
Name
Address
Owner_id
BANK
Bname
Baddress
Owner_id
COMPANY
Cname
Caddress
Owner_id
OWNER
Owner_id