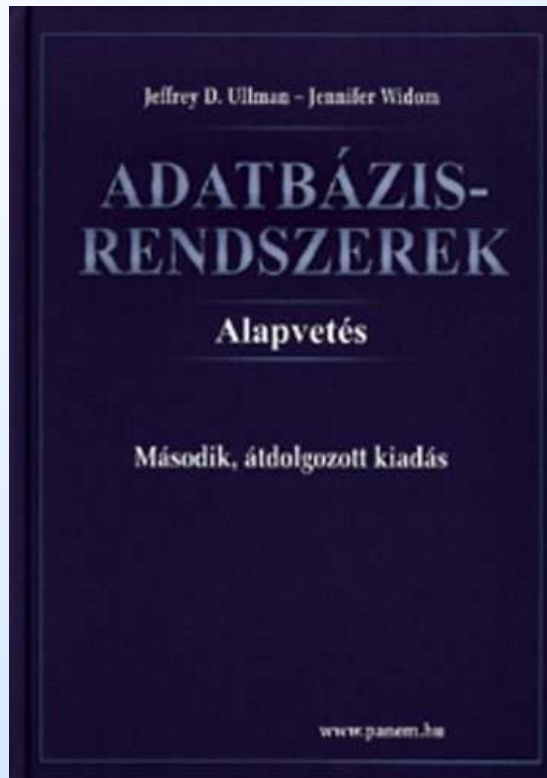


Magas szintű adatbázismodellek

Az egyed-kapcsolat modell --2.



Ullman-Widom: Adatbázisrendszerek
Alapvetés. Második, átdolgozott kiadás,
Panem, 2009

4.5. E/K-diagram átírása
relációs modellé

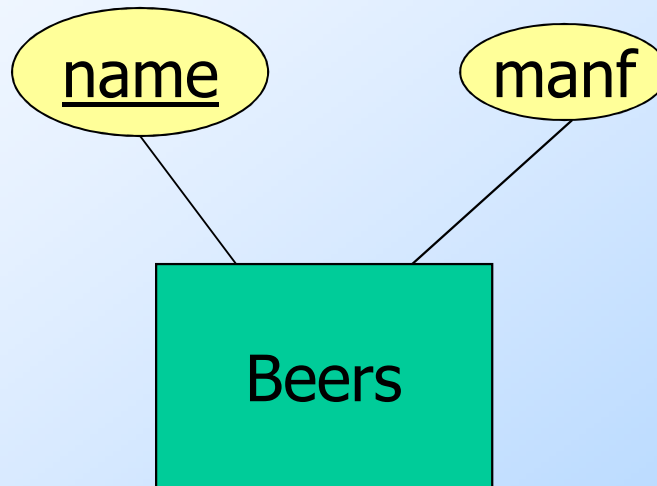
4.6. Osztályhierarchia átalakítása
relációkká

(Jeffrey D. Ullman, 2007 EA alapján)

From E/R Diagrams to Relations

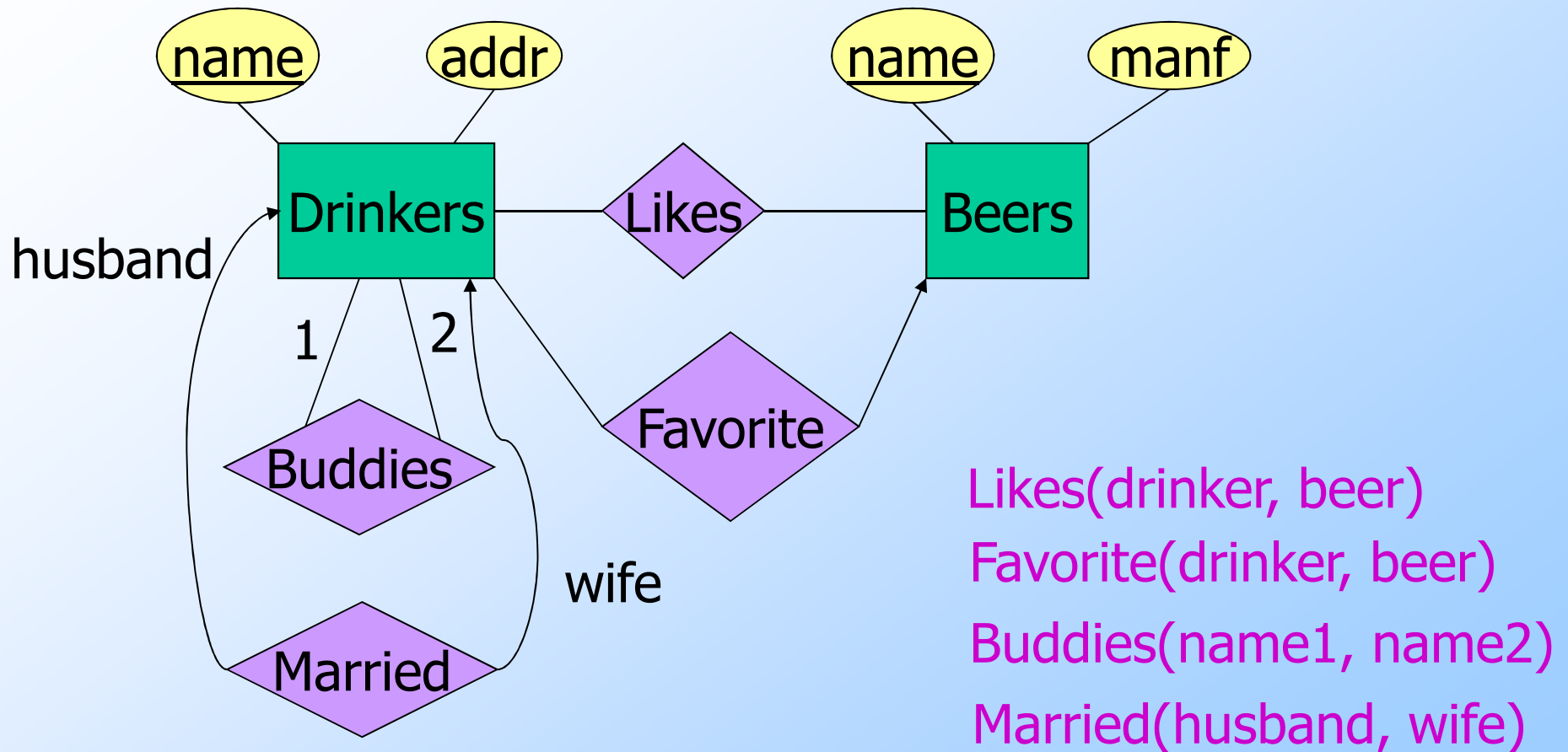
- ◆ Entity set -> relation.
 - ▶ Attributes -> attributes.
- ◆ Relationships -> relations whose attributes are only:
 - ▶ The keys of the connected entity sets.
 - ▶ Attributes of the relationship itself.

Entity Set -> Relation



Relation: **Beers(name, manf)**

Relationship -> Relation



Combining Relations

- ◆ OK to combine into one relation:
 1. The relation for an entity-set E
 2. The relations for many-one relationships of which E is the “many.”
- ◆ **Example:** Drinkers(name, addr) and Favorite(drinker, beer) combine to make Drinker1(name, addr, favBeer).

Risk with Many-Many Relationships

- ◆ Combining Drinkers with Likes would be a mistake. It leads to redundancy, as:

name	addr	beer
Sally	123 Maple	Bud
Sally	123 Maple	Miller

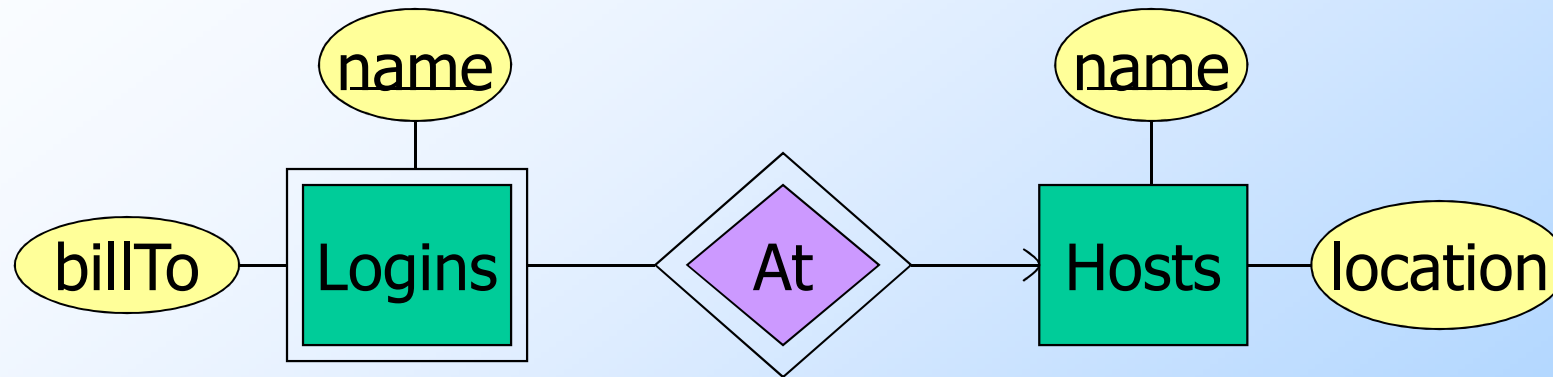
Redundancy



Handling Weak Entity Sets

- ◆ Relation for a weak entity set must include attributes for its complete key (including those belonging to other entity sets), as well as its own, nonkey attributes.
- ◆ A supporting relationship is redundant and yields no relation (unless *it* has attributes).

Example: Weak Entity Set -> Relation

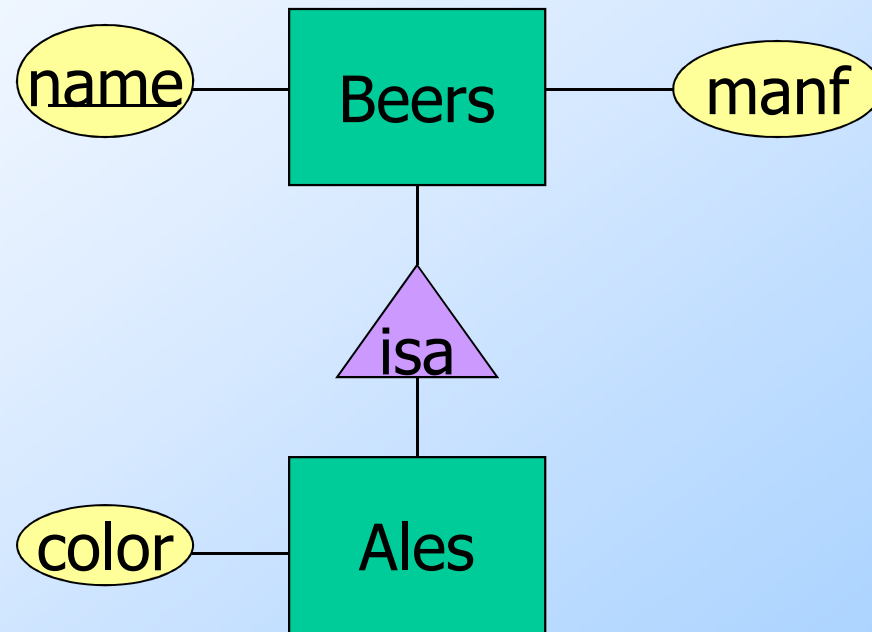


Hosts(hostName, location)
Logins(loginName, hostName, billTo)
~~At(loginName, hostName, hostName2)~~

At becomes part of Logins

Must be the same

Example: Subclass -> Relations



Subclasses: Three Approaches

1. *Object-oriented* : One relation per subset of subclasses, with all relevant attributes.
2. *Use nulls* : One relation; entities have NULL in attributes that don't belong to them.
3. *E/R style* : One relation for each subclass:
 - ▶ Key attribute(s).
 - ▶ Attributes of that subclass.

Object-Oriented

name	manf
Bud	Anheuser-Busch

Beers

name	manf	color
Summerbrew	Pete's	dark

Ales

Good for queries like "find the color of ales made by Pete's."

E/R Style

name	manf
Bud	Anheuser-Busch
Summerbrew	Pete's

Beers

name	color
Summerbrew	dark

Ales

Good for queries like
"find all beers (including
ales) made by Pete's."

Using Nulls

name	manf	color
Bud	Anheuser-Busch	NULL
Summerbrew	Pete's	dark

Beers

Saves space unless there are *lots* of attributes that are usually NULL.