Keys

Designing Schemas

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Learning Objectives

By the end of this video, you will be able to:

- Define key in terms of functional dependencies.
- Distinguish the notions of key and superkey.

What Is a Key?

- After defining FDs, we can now define keys formally.
- **Key** of a relation $R(A_1, \ldots, A_n)$ is a set of attributes K that
  - Functionally determines all attributes of R, $K \longrightarrow A_1, \ldots, A_n$, and
  - None of its subsets does
- Superkey
  - A set of attributes that contains a key

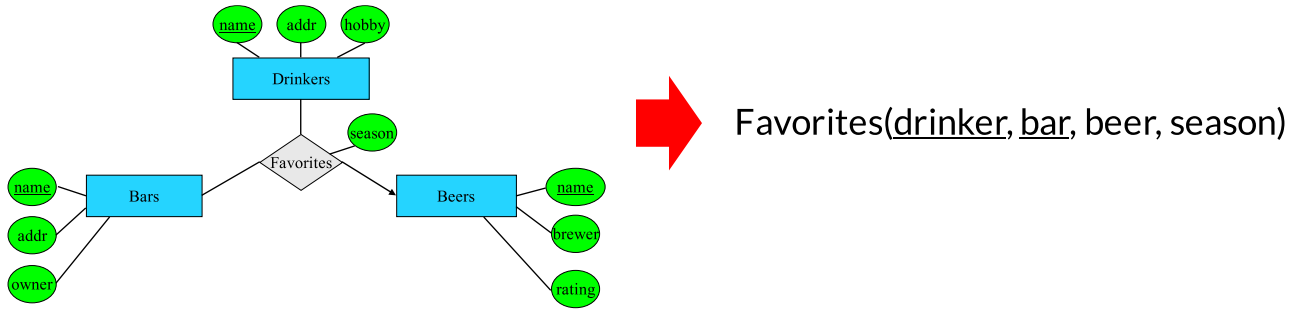
Explaining the Key Rule in ER Translation

- Recall this rule:

Relationship → Relation

Rule: Translating relationship *X* of E_1 … , E_n to relation *R*

- Attributes of *R* = key attributes of E_1, … , E_n plus attributes of *X*
- Key of *R* = key of E_1, … , E_n except those "arrowed" entities



Translating relationship into relation

- Why?
  - {drinker, bar, beer} is not a key, since {drinker, bar} already is.
  - {drinker, bar, beer} is a superkey.