Entity	Attribute	Relationship
Weak Entity	Multivalued Attribute	Weak Relationship

A weak entity can be identified uniquely only by considering the primary key of some other (owner) entity.
- Owner entity set and weak entity set must participate in a one-to-n relationship set (one owner, many weak entities).
- Weak entity set must have *total* participation in this *identifying* relationship set.
- Dependent identifier is unique only within owner context

- Overlap constraints: Can employee Joe be an Hourly_Emps as well as a Contract_Emps entity? (disjoint if not)
- Covering constraints: Must every Employees entity be either an Hourly_Emps or a Contract_Emps entity? (covering if so)

Saying K is a candidate key for R means K -> R

Armstrong's Axioms (X, Y, Z are sets of attributes):
§ Reflexivity: If $X \subseteq Y$, then Y -> X
§ Augmentation: If X -> Y, then XZ -> YZ for any Z
§ Transitivity: If X -> Y and Y -> Z, then X -> Z

If X is part of a (candidate) key, we will say that X is a prime attribute.
If X (an attribute set) contains a candidate key, we will say that X is a superkey.

Rel'n R is in 1NF if all of its attributes are atomic.
§ No set-valued attributes! (1NF = "flat")
§ Usually goes w/o saying for relational model

Rel'n R is in 2NF if it is in 1NF and no non-prime attribute is partially dependent on a candidate key of R.

Rel'n R is in 3NF if it is in 2NF and it has no transitive dependencies to non-prime attributes.

Rel'n R with FDs F is in BCNF if, for all X -> A in F+
- $A \in X$ (trivial FD), or else
- X is a superkey (i.e., X contains a key) for R.
- A is part of some key for R (i.e., it's a prime attribute).
In other words, R is in BCNF if the only non-trivial FDs that hold over R are key constraints (key -> attr)

There are three potential "problems" to consider:
1. Some queries will become more expensive.
2. Given instances of the decomposed relations, we may not be able to reconstruct the corresponding instance of the original relation! (If "lossy"...)
3. Checking some dependencies may require joining the instances of the decomposed relations.

CREATE TABLE cs122a_hw.Recordings(
    recording_id   integer NOT NULL,
    start_time   date,
    end_time   timestamp,
    meeting_id   integer NOT NULL,
    PRIMARY KEY(recording_id),
    UNIQUE(start_time)
    FOREIGN KEY(meeting_id) REFERENCES cs122a_hw.Meetings ON DELETE CASCADE
);