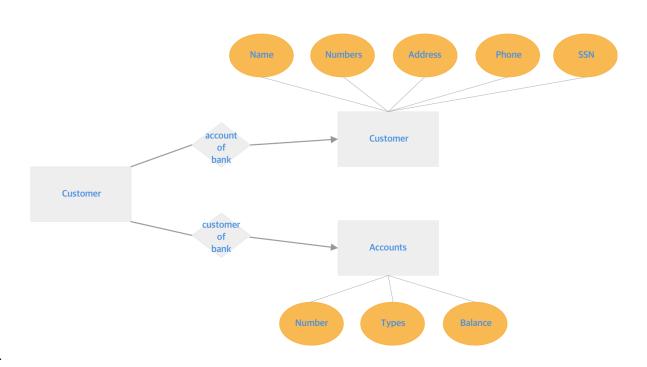
CSC343 Worksheet 14 Solution

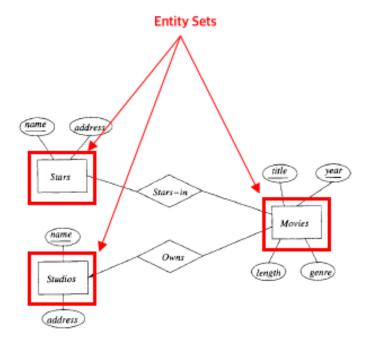
July 7, 2020



1.

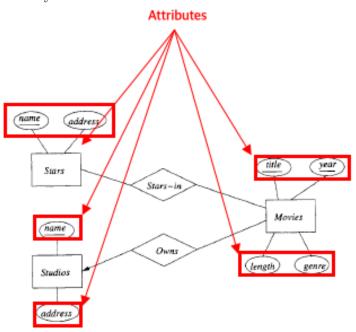
Notes:

- E/R Model
 - Means Entity Relationship Model
 - Entity Relationship Model(ER Modeling) is a graphical approach to database design.
 - Is comparable to class diagram in UML
 - Uses three principle element types:
 - 1. Entity sets
 - * Is an abstract object of some sort (i.e. entitiy)
 - * Is not used to represent class
 - * Is represented by rectangles



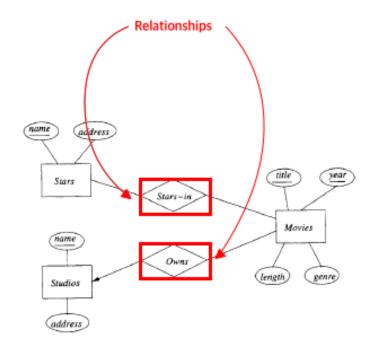
2. Attributes

- * Are properties of entities in a set (i.e. column name)
- * Each has its own primitive data types (e.g. String, integers, Reals)
- * Is represented by ovals

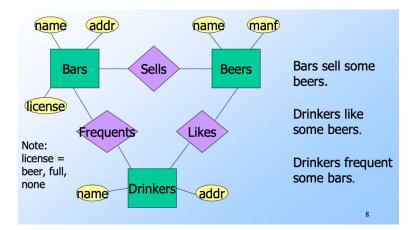


3. Relationships

- $\ast\,$ Are connections among two or more entity sets (e.g. intermediary Relations like Stars In)
- * Is represented by diamond

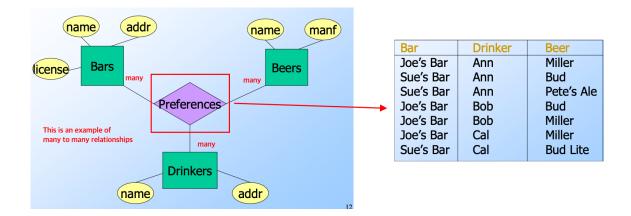


Example:



• Multiway Relationships

- Connects more than two relationship sets
- Enables to represent relationships that otherwise is difficult in binary relationship
- $Arrow \rightarrow 'one'$
- No arrow \rightarrow 'many'



Example 2:

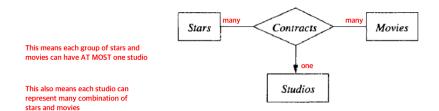


Figure 4.4: A three-way relationship

• Roles in Relationships

- Is the label of edges between the entity set and relationship
- Are used to clarify the sementics of relationship

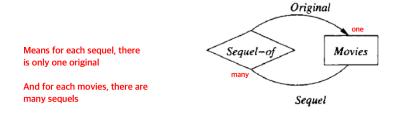


Figure 4.5: A relationship with roles

Example 2:

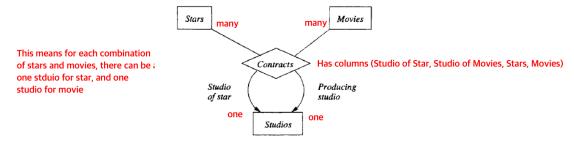
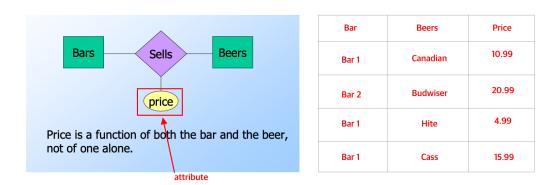


Figure 4.6: A four-way relationship

- Attributes on Relationships
 - can be thought as a property of tuples in the relationship set (i.e. String, Integer, Float, Boolean)

Example:



- Can be removed by creating an entity set with the attribute



• Conversting Multiway Relationships to Binary

Example:



- Subclasses in the E/R Model
 - Has its own special attributes and/or relationships
 - All 'isa' relationship is one to one
 - Is represented by triangle with label 'isa' followed by entity set

