Entity relationship model

Database: Collection of entities and relationship among them

Entity is a distinguishable object (person) that have attributes (name, address) whose values are restricted by domain – range

Relationship is the association among several entities. Relationship set contains several entities taken from entity sets. (customer, account) ∈depositor. Relationship set can also have attributes. E.g. Entity (Customer) – Relationship (Access date) – Entity (account)

Can make relationship attribute into attribute of entity if mapping cardinalities allow (one to one, one to many, many to many, many to one)

Rectangle - entity set

Diamond - relationship set

Ellipse - attributes: double multivalued attributes, dashed derived attributes, underline primary key

Roles (labels) are indicated in ER diagram by labeling the lines that connect diamonds to rectangle

Cardinality constraints

□ <-◇-> □ one to one

□ <- ◇- □ one to many

□ - ◇-> □ any to one

□ - ◇ - □ many to many

Total participation: every entity in entity set participates ==

□ - ◇ = □

Super key: a set of one or more attributes whose values uniquely determine each entity

Candidate key: a minimal super key

Primary key: a selected candidate key

Combination of primary keys of participating entity sets forms a super key of a relationship set

Weak entity set (double rectangle) – doesn’t have primary key, have discriminator (partial key, depicted as underline dashline)

The existence of a weak entity set depends on the existence of a identifying entity set (double diamond)