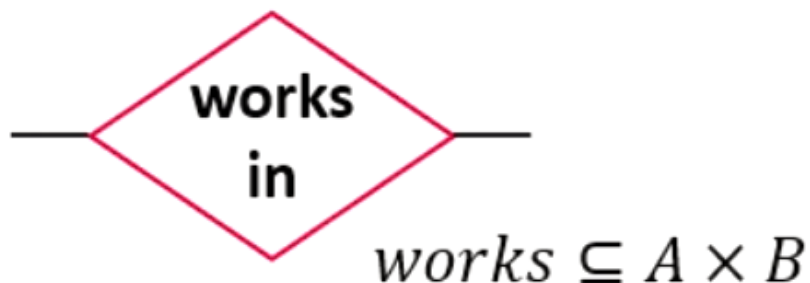- [[Modified Chen Notation]]

Entity

- objects of the real world
- entity type/set
    - collection of entities
- [[Weak Entity]]
    - entities that are dependent on existing entity

-

Relationship Type

- defines behaviour between entities
- connected to concrete entities
- special types:
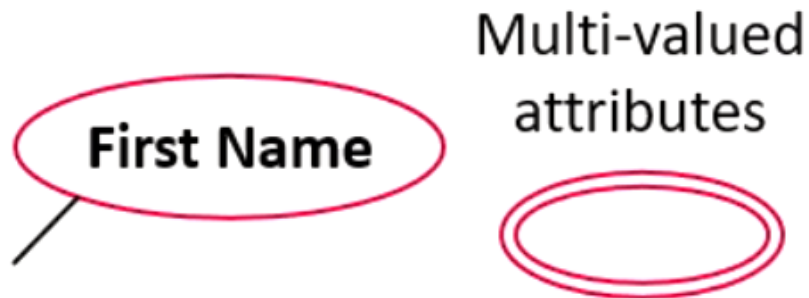   - [[N-ary Relationships]]
    - [[Recursive Relationships]]

$$works \subseteq A \times B$$

-

Attribute

- entities or relationshiips may have attribute value pairs
- attributes describe entity/object

- [[Attribute Types]]
  - multi-value
  - derived
  - composite
  - nullable

Multi-valued
attributes

First Name

-

Keys

- unique attribute to identify entity
  - e.g. IDs
- every entity needs key

EmpID

-

Role

- optional description of relationship

employed   works   employs
            in
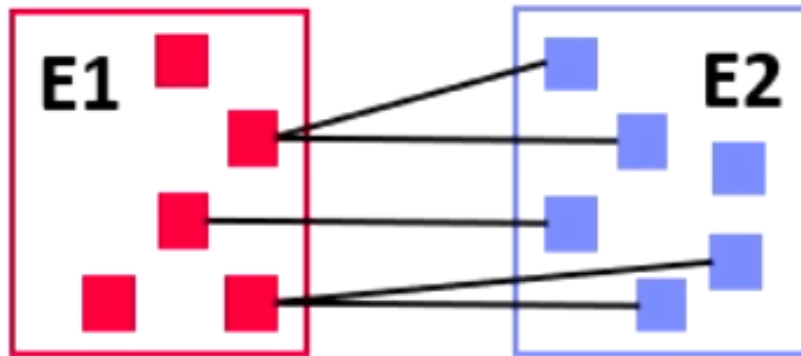
-

Cardinality

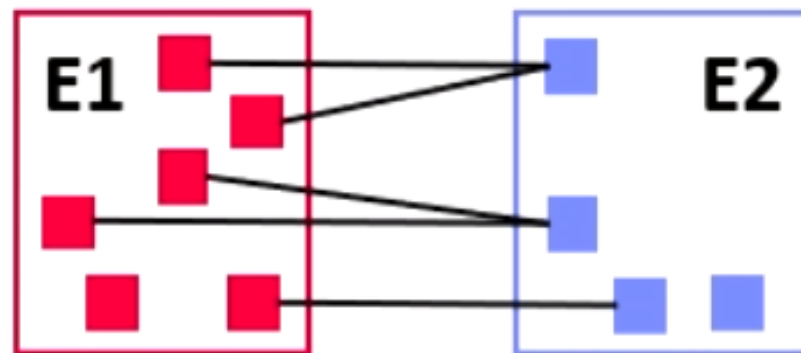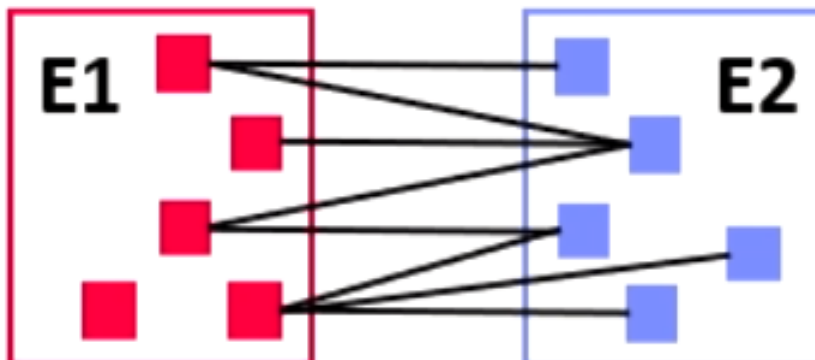- one-to-one 1:1
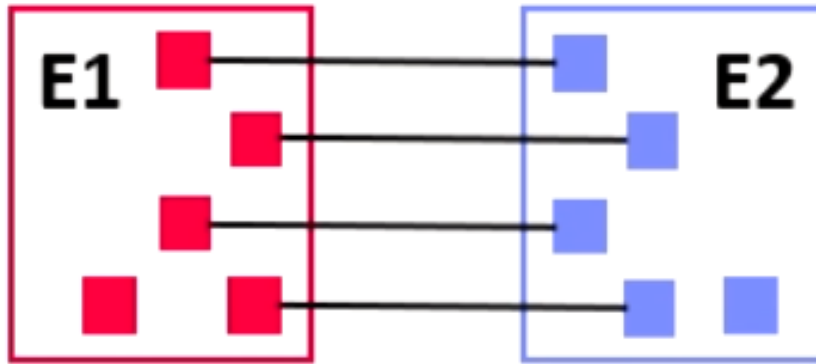
- one-to-many 1:N
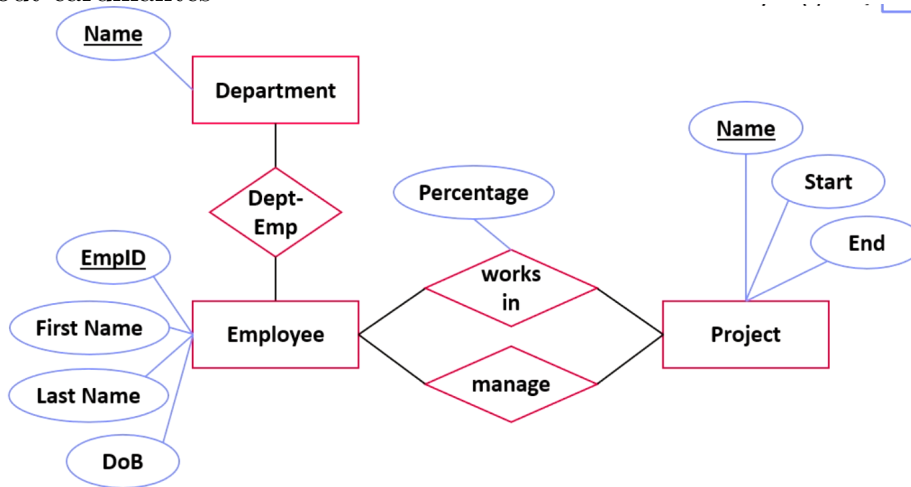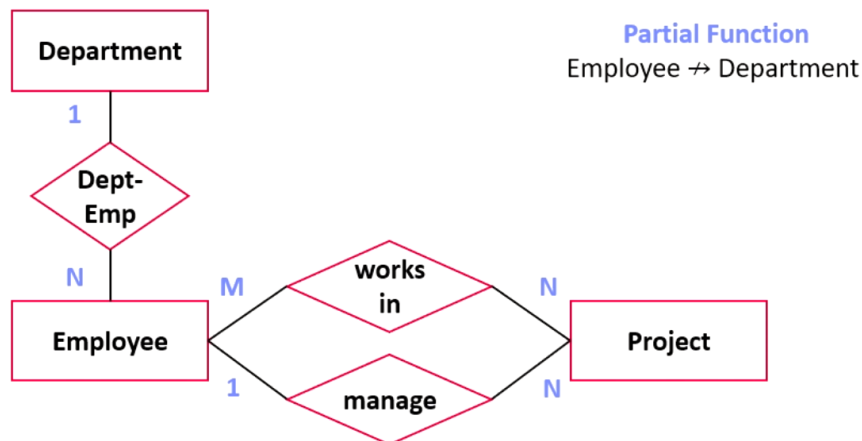

- many-to-one N:1

- many-to-many N:M
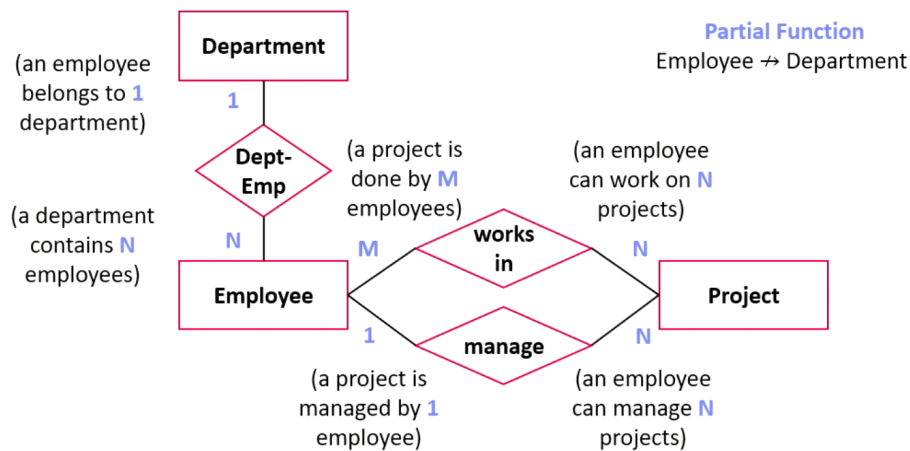
Employee DB Example

- without cardinalites

- with cardinalities

- with additional information

[[ER Diagram]]