

CS 338

Lecture 15

Entity Relationship Diagrams

Additional Slides

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Identify all the SK, CK and PK for the provided entity:

1 SK

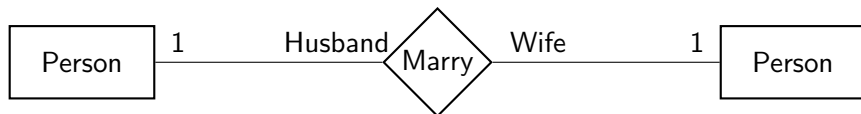
2 CK

3 PK

1. Marriage relationship between two persons

Assumptions:

- 1 Every person has at most one wife.
- 2 Every person has at most one husband.



2. Boyfriend/Girlfriend relationship between two persons

Assumptions:

- 1 Every person has at most one girlfriend.
- 2 Every person has at most one boyfriend.



3. Parent/Child relationship between two persons



In the Company ER diagram,

- 1 Example of weak entity?

A: DEPENDENT

- 1 Identify the PK for this weak entity

A: (SSN, Name)

- 2 Example of identifying relationship?

A: DEPENDENT_OF

- 3 What is the primary key for DEPARTMENT?

A: Number

- 4 How many super keys for DEPARTMENT?

A: 4

In the Company ER diagram,

5 What is the primary key for PROJECT?

A: Number

6 How many super keys for PROJECT?

A: 4

7 Modify the diagram so that an employee must have a supervisor.

A: See next slide.

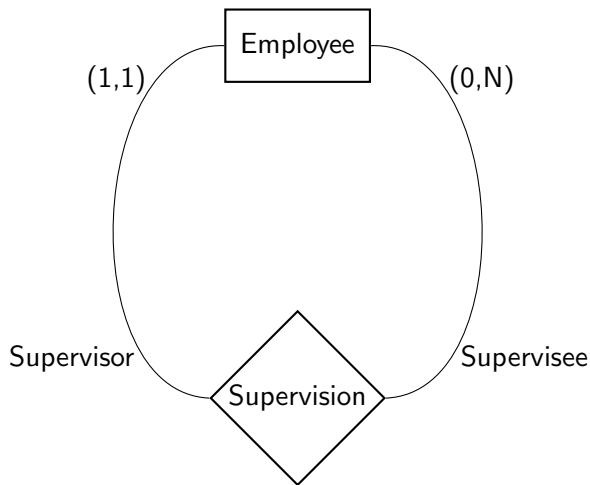
8 Explain the semantics (implied by the structural constraints) on the WORKS_ON relationship.

A: Many-to=many

1 An employee works on zero or more projects.

2 A project is worked on by zero or more employees.

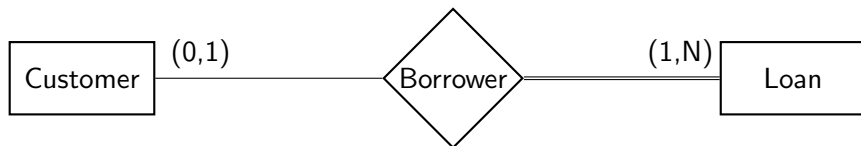
Draw ER Diagram: an employee must have a supervisor



Draw ER Diagram

Assumptions:

- 1 A customer can borrow at most 1 loan, and
- 2 a loan has at least one borrower



Cardinality

See the provided diagram.

Participation

- 1 Customer: partial
- 2 Loan: total