

Part 2

Entity Relationship Diagram (ERD)

- Example: Company Database
- Entity, Attribute, Relationship
- Structural constraints
- Weak entity types
- More ER Examples (Registration DB)
- More ER Examples (Bank DB)
- In class exercise 1: Zoo Database
- In class exercise 2: Library Database
- Alternative Notations for structural constraints (min,max) notation

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Reference to: Fundamentals of Database Systems , Ramez Elmasri and Shamkant B. Navathe, Fifth Edition.

Example Database (Company DB)

- Suppose the outcome of requirements collection is as follows.
 - The company is organized into departments. Each department has a unique name, a unique number, and a particular employee who manages the department. We keep track of the start date when that employee began managing the department. A department may have several locations.

Example Database (Company DB)

- Suppose the outcome of requirements collection is as follows
 - A department controls a number of projects, each of which has a unique name, a unique number, and a single location.

Example Database (Company DB)

- Suppose the outcome of requirements collection is as follows
 - We store each employee's name, social security number, address, salary, gender, and birth date. An employee is assigned to one department but may work on several projects, which are not necessarily controlled by the same department. We keep track of the number of hours per week that an employee works on each project. We also keep track of the direct supervisor of each employee.

Example Database (Company DB)

- Suppose the outcome of requirements collection is as follows
 - We want to keep track of the dependents of each employee for insurance purposes. We keep each dependent's first name, gender, birth date, and relationship to the employee.

Example Database (Company DB)

- The previous requirements can be translated into the following schema represented as “Entity-Relationship (ER) Schema Diagram”.
- This ER diagram is shown in the next slide.

ER Schema diagram for the Company Database

