Database Design

3-3

Speaking ERDish & Drawing Relationships
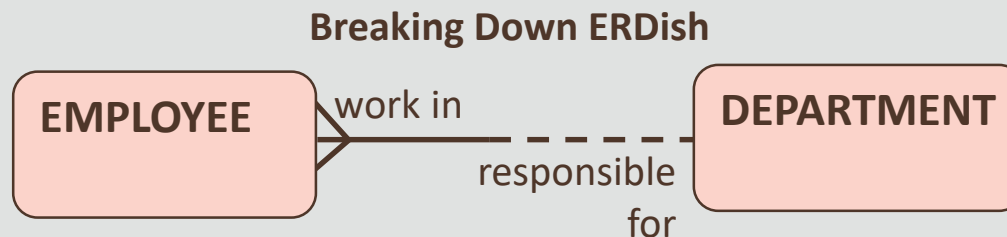

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Objectives

- This lesson covers the following objectives:
  - State relationships between entities in precise words (ERDish)
  - Draw and label relationships correctly on an ERD

Purpose

- Most businesses use industry-specific terminology (words which have a special meaning within that business) in order to communicate information

- Data modeling uses industry-specific terminology as well, which we will call ERDish for the purposes of this class

- ERDish—the vocabulary used to clearly communicate the business rules that are captured on an ERD—will give you a common language both when collecting the business rules from your client and communicating them to the Database Administrators who will implement your design

ERD Language

- ERDish is the language we use to state relationships between entities in an ERD

- You have already been speaking and writing it, when you identified relationships and specified optionality and cardinality

- We are simply breaking down each ERDish sentence into its components

Breaking Down ERDish

EMPLOYEE — work in / responsible for — DEPARTMENT

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The Components of ERDish

- EACH

- Entity A

- OPTIONALITY (must be/may be)

- RELATIONSHIP NAME

- CARDINALITY (one and only one/one or more)

- Entity B

The Components of ERDish

- Since each relationship has two sides, we read the first relationship from left to right (or top to bottom, depending on the ERD layout)

Breaking Down ERDish

1. EACH
2. Entity A
3. OPTIONALITY (must be/may be)
4. RELATIONSHIP NAME
5. CARDINALITY (one and only one/one or more)
6. Entity B

1. EACH
2. **EMPLOYEE** (entity A)
3. **MUST** (optionality, solid line)
4. **WORK IN** (relationship name)
5. **ONE (AND ONLY ONE)** (cardinality, single toe)
6. **DEPARTMENT** (entity B)

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The Components of ERDish

- Now we read the relationship from right to left

Breaking Down ERDish

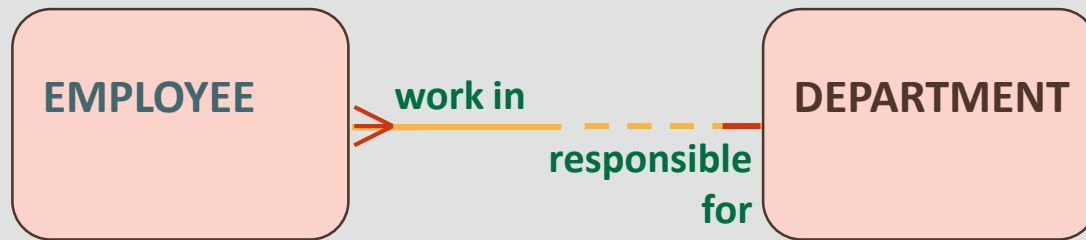| EMPLOYEE | >──── | ┈┈┈┈ | DEPARTMENT |

responsible for

1. EACH
2. Entity B
3. OPTIONALITY (must be/may be)
4. RELATIONSHIP NAME
5. CARDINALITY (one and only one/one or more)
6. Entity A

1. EACH
2. **DEPARTMENT** (entity B)
3. **MAY BE** (optionality, dotted line)
4. **RESPONSIBLE FOR** (relationship name)
5. **ONE OR MORE** (cardinality, crow's foot)
6. **EMPLOYEE** (entity A)

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The Components of ERDish

- Now bring it all together

1. EACH	1. EACH
2. **EMPLOYEE** (entity A)	2. **DEPARTMENT** (entity B)
3. **MUST** (optionality, solid line)	3. **MAY BE** (optionality, dotted line)
4. **WORK IN** (relationship name)	4. **RESPONSIBLE FOR** (relationship name)
5. **ONE AND ONLY ONE** (cardinality, single toe)	5. **ONE OR MORE** (cardinality, crow's foot)
6. **DEPARTMENT** (entity B)	6. **EMPLOYEE** (entity B)

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Terminology

- Key terms used in this lesson included:
  - ERDish

Summary

- In this lesson, you should have learned how to:
    - State relationships between entities in precise words (ERDish)
    - Draw and label relationships correctly on an ERD