Database Design

3-3

Speaking ERDish & Drawing Relationships
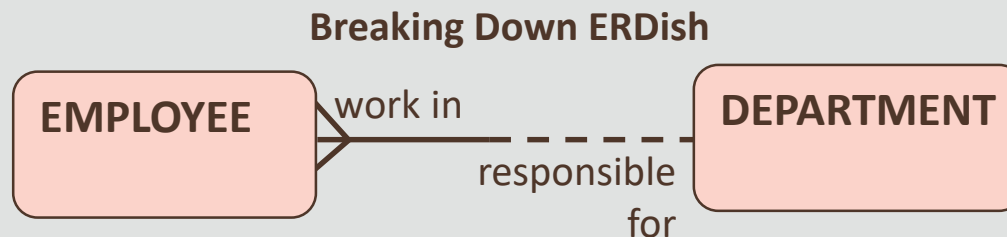

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Objectives

- 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

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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

5

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

| EMPLOYEE | work in | DEPARTMENT |

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

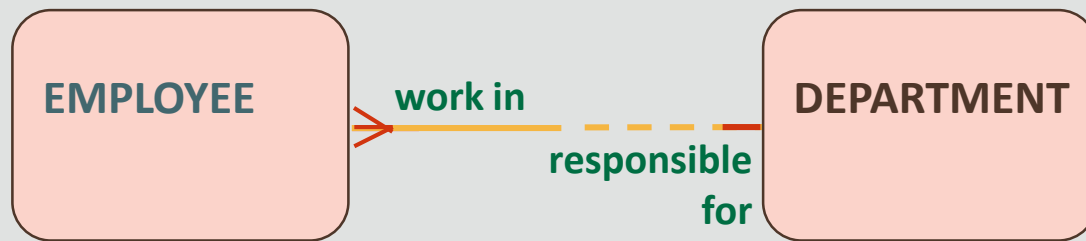EMPLOYEE ▷ — — — — DEPARTMENT

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

EMPLOYEE → work in / responsible for → DEPARTMENT

EMPLOYEE side:
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)

DEPARTMENT side:
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 B)

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