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Database Design

3-3

Speaking ERDish & Drawing Relationships

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This lesson discusses how to describe a relationship using precise language, and in turn, correctly draw the relationship.

Objectives

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

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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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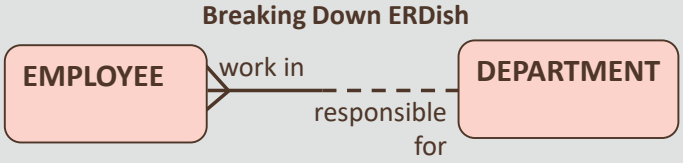
ERD Language

- 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



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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

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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)

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

Breaking Down ERDish

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

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

Breaking Down ERDish

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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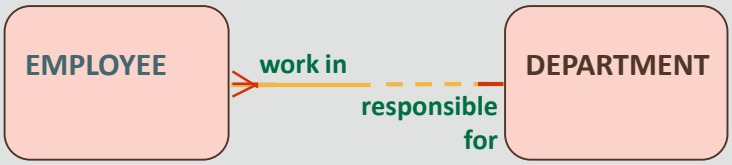
It is often necessary to add a small "s" to the end of the second entity name to make the ERDish sentence more readable.

The Components of ERDish

- Now bring it all together



1. EACH
2. **EMPLOYEE** (entity A)
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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)

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Each EMPLOYEE must work in one and only one DEPARTMENT.
EACH DEPARTMENT may be responsible for one of more EMPLOYEEs.

Terminology

- Key terms used in this lesson included:
  - ERDish

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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

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