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Database Design

3-3
Speaking ERDish & Drawing Relationships

Objectives

This lesson covers the following objectives:

- State relationships between entities in precise words (ERDish)

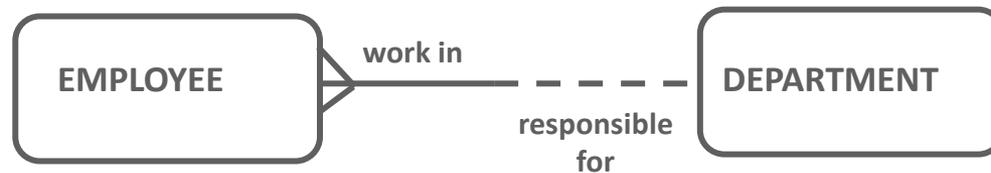- Draw and label relationships correctly on an ERD

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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.

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

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

EMPLOYEE — work in — DEPARTMENT

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)

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
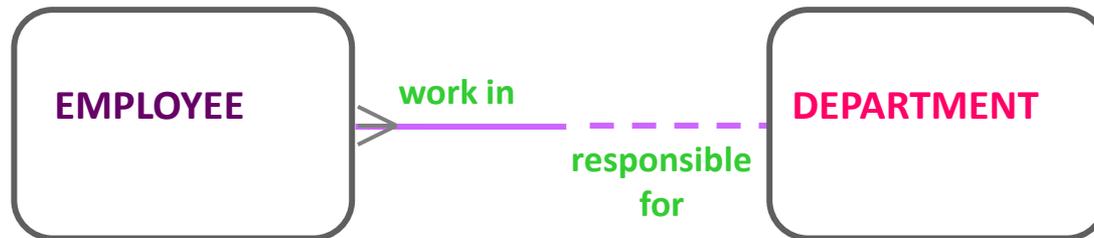5. CARDINALITY (one and only one/one or more)
6. Entity A

Breaking Down ERDish

EMPLOYEE ▷ - - - - DEPARTMENT

responsible for

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)

The Components of ERDish

- Now bring it all together.

```
┌─────────────┐   work in          ┌─────────────┐
│             │>────────────       │             │
│  EMPLOYEE   │          ╴ ╴ ╴ ╴   │ DEPARTMENT  │
│             │   responsible       │             │
│             │      for            │             │
└─────────────┘                    └─────────────┘
```

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)

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

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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