Databases

Lecture 4 - Entity-Relationship-Model

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1. Introduction

1.1 Where are we right now?

- Last time, we looked at how to logically and conceptually design databases.
- You also learned about how to use simple SQL language to map a conceptually designed database to an actual one.
- Today, we'll look at
  - what relationships are in terms of databases,
  - how we can use constraints to enforce our relationships and,
  - how we can implement that in SQL.

1.1 Where are we right now?

1. Introduction
2. Basics
3. SQL
4. Entity-Relationship-Model
5. **Relationships**
6. Constraints
7. More SQL
8. Subqueries & Views
9. Transactions
10. Database Applications
11. Integrity, Trigger & Security

1.2 What is the goal of this chapter?

- At the end of this lesson, you should be able to
  - define relationships and identify which type of relationship that is and,
  - decide how to implement that relationship in SQL.

1.2 What is the goal of this chapter?

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2. Relationships

2.1 Relationship Types

Basics

- Describe relationships between entity types characterized by a verb
- Often 2 naming possibilities:
  - teaches vs. is taught by
  - Relationship has always two (or more) directions
- May have attributes
- Number of participating entity types (degree):
  1. Unary relationship type (e.g., Employee supervises another employee)

2.1 Relationship Types

2. Binary relationship type (e.g., Employee works for one department)
3. Ternary relationship type (e.g., Lecturer recommends books for one specific course)
4. Higher degrees…ees…

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