Data Relationships

CS 2550 Database 2023
Cody Henrichsen

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Relationship Types

- How data in different tables relate to each other
- Also called the cardinality
  - One to One – 1 : 1
  - One to Many – 1 : Many
  - Many to Many – M : N
- Written as a ratio

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Optionality

- Not every example of the relationship type has to have an entry
- Some of the rows in table A may have ZERO reference to table B
- This can be in any of the three cardinality options
- It is represented on an ER diagram by a circle before the type of relationship
- If there is a required value it is represented by a perpendicular line on the relationship connection

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1 : 1

- There is exactly one entry for the table on the left for the table on the right
  - State – Capital City
  - Person – Fingerprints
  - Student – Chromebook

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1 : Many

- There are many entries for the table on the right for each entry of the table on the left
  - Car Company – Models
  - Customer – Orders
  - Library Card – Checked out books
  - Cupboard – Dishes

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M : N

- Both the left and right tables have multiple entries with corresponding values
- This requires an associative table that is built from the primary keys of the corresponding tables
  - Orders – Products
  - Students – VP
  - Influencer – Follower
  - Books – Authors
  - Ingredients – Recipes
  - Doctors – Patients

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