

ER Model

Mapping ER to Relational

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1 Mapping ER Schemas to Relations

Recap

- 1 create relation schemas from entity types
- 2 create relation schemas from relationship types
- 3 identify keys
- 4 identify foreign keys
- 5 optimize

Problem: we need to design the ER schema to represent information about students, courses, teachers and departments during a SINGLE academic semester.

- Entity Types

- Student: Name, Address
- Course: Name, Number
- Teacher: Name
- Faculty: Rank
- Dept: Name, Address

- Relationship Types

- Faculty **IS A** Teacher
- Students may **enroll** in multiple courses
- Courses may have multiple students **enrolled**
- For each **enrolled** course, a student receives a **grade**
- Teachers may **teach** multiple courses
- A course is **taught** by a single teacher
- A course is **offered** by a unique department
- Departments may **offer** multiple courses

