

Tutorial 10 – Database Design

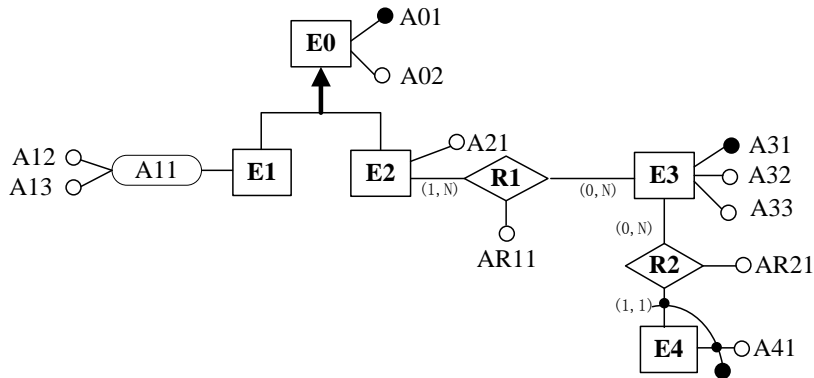
CSC343 - Introduction to Databases

Fall 2008

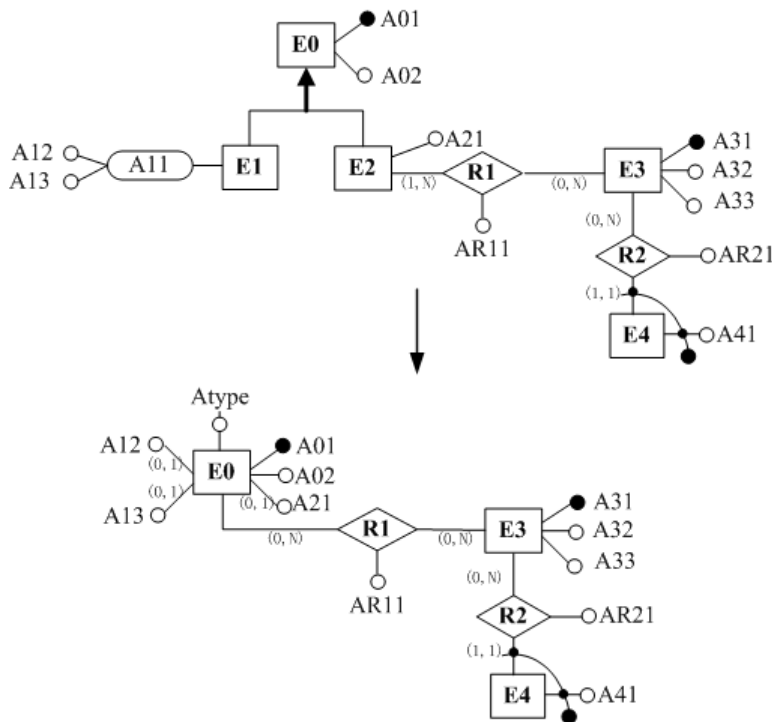
TA: Lei Jiang

Exercise 1: ER to Relational Schema

Convert follow ER schema to a relational schema, using the rules you learned in the class (the cardinality constrains with both the maximum and minimum numbers being 1 are omitted for clarity).



Solution:



E0(A01, A02, A12*, A13*, A21*, Atype)

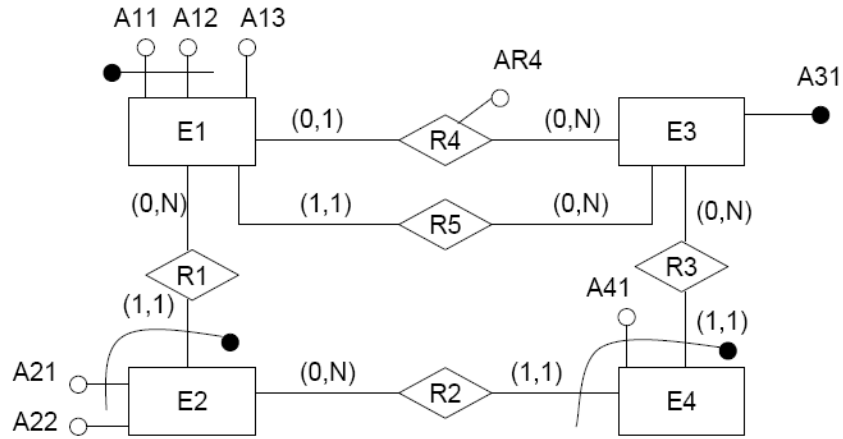
E3(A31, A32, A33)

R1(A01, A31, AR11)

E4(A31, A41, AR21)

Exercise 2: ER to Relational Schema

Translate the following E-R schema into a relational schema. For each relation indicate the key and, for each attribute, specify if null values can occur (supposing that the attributes of the E-R schema do not admit null values)

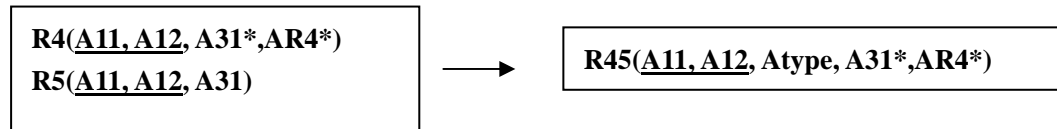


E1(A11, A12, A13)

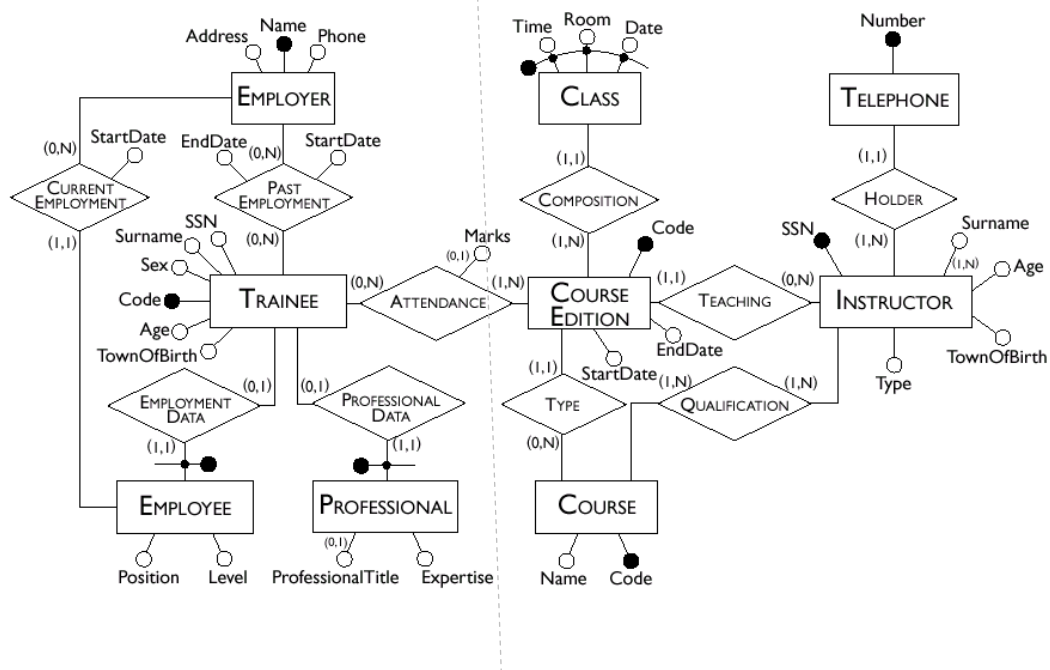
E2(A21, A11, A12, A22)

E3(A31)

E4(A41, A31, A21, A11, A12,)



Exercise 3: ER to Relational Schema



Course(Code, Name)

CourseEdition(Code, StartDate, EndDate, Course, Instructor)

Class(Time, Room, Date, Edition)

Instructor(SSN, Surname, Age, TownOfBirth, Type)

Telephone(Number, InstructorSSN)

Qualification(Course, Instructor)

Employer(Name, Address, Telephone)

Trainee(Code, SSN, Surname, Age, TownOfBirth, Sex)

PastEmployment(Trainee, Employer, StartDate, EndDate)

Employee(TraineeCode, Level, Position, Employer, StartDate)

Professional(TraineeCode, Expertise, ProfessionalTitle*)

Attendance(Trainee, Edition, Marks*)