CS 4400: Intro to Database Systems

- Translating Your Enhanced Entity-Relationship (EER) Diagram to Relational Schema (v2)

- It's all about "the algorithm"...

- See Chapter 9 of the 7th Edition textbook

- The following slides will use a different **EER Diagram** from the text – so, now you have 2 examples ;)

User entity with attributes: First, Last, Name, Email, <u>SSN</u>, Title, <u>LoginID</u>, Awards (multivalued)

d (disjoint specialization)

Instructor (Field) — **mentor** (1 : N) — **Student** (GradYear)

Instructor — **advise** (1 : 1) — **Building** (Motto, <u>BldgID</u>)

Building (1) — **live-at** (N) — **Student**

Student (N) — **take** (M) — **Course** (Grade, Semester)

Student (N) — **major-in** (1) — **Department**

Instructor (1) — **direct** (1) — **Course**

Instructor (M) — **teach** (N) — **Course**

Course attributes: <u>Number</u>, Name, Credits

Course (N, after) — **prereq** (M, before) — **Course**

Course (N) — **own** (1) — **Department**

Department attributes: Name, <u>DeptID</u>, Size (derived)

Entity-Relationship Diagram

- **User** (entity) with attributes: Name (First, Last), Email (key), SSN (key), Title, LoginID (key), Awards (multivalued, derived)
- **Instructor** (entity) with attribute: Field
- **Student** (entity) with attribute: GradYear
- **Building** (entity) with attributes: Motto, BldgID (key)
- **Course** (weak entity) with attributes: Number (key), Name, Credits
- **Department** (entity) with attributes: Name, DeptID (key), Size (derived)

Relationships:
- **mentor**: Instructor (1) — Student (N)
- **advise**: Instructor (1) — Building (1)
- **live-at**: Building (1) — Student (N)
- **direct**: Instructor (1) — Course (1)
- **teach**: Instructor (M) — Course (N)
- **take**: Student (N) — Course (M), with attributes Grade, Semester
- **major-in**: Student (N) — Department (1)
- **own**: Course (N) — Department (1)
- **prereq**: Course (N, after) — Course (M, before)

d — disjoint specialization of User into Instructor and Student