Hogwarts Example

Translating ER to Relational Model

- Main ideas:
  - Each entity set maps to a new table
  - Each attribute maps to a new table column
  - Each relationship set maps to either new table columns or to a new table

Representing Strong Entity Sets

- Entity set E with attributes $a_1,\ldots a_n$ translates to table E with attributes $a_1,\ldots,a_n$
- Entity of type E => row in table E
- Primary key of entity set = primary key of table

- What about ISA relationships?
  - Two options

Person (ID , Name , Pet , Wand)

Student (ID, yearEnteredSchool)

Teacher (ID, yearJoined)

Student (ID , Name , Pet , Wand , yearEnteredSchool)

Teacher (ID , Name , Pet , Wand , yearJoined)

Representing Strong Entity Sets (Cont.)

- Student (ID , Name , Pet , Wand , yearEnteredSchool)
- Teacher (ID , Name , Pet , Wand , yearJoined)
- Subject (Name)
- House (Name)

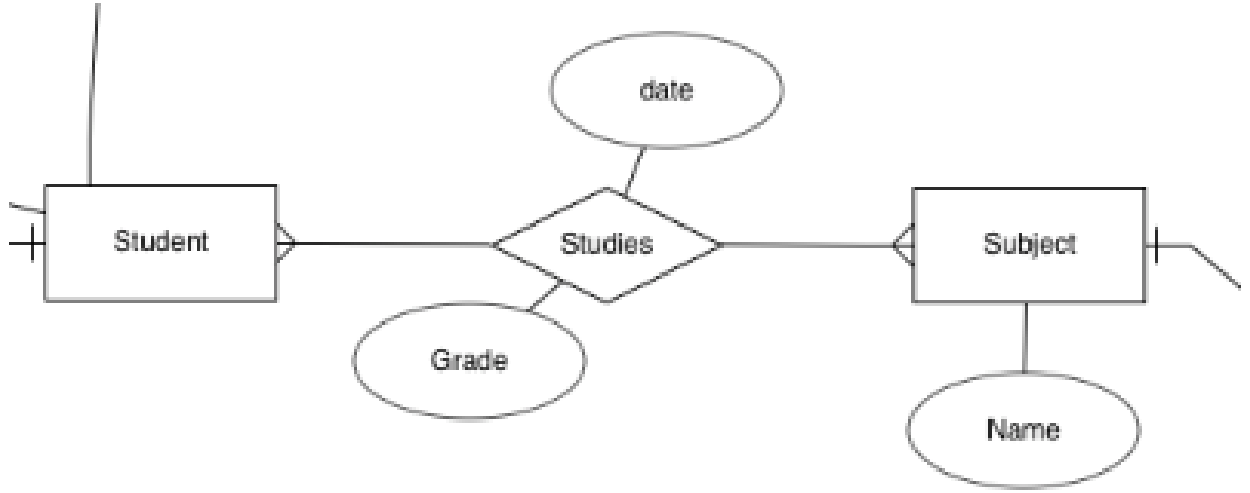
Representing Weak Entity Sets

- Weak entity set E translates to table E
- Columns of table E should include
  - Attributes of the weak entity set
  - Attributes of the identifying relationship set
  - Primary key attributes of entity set for dominating entities
- Primary key of weak entity set = primary key of table

Deed (ID , Points , Description , Date/Time)

Representing Relationship Sets

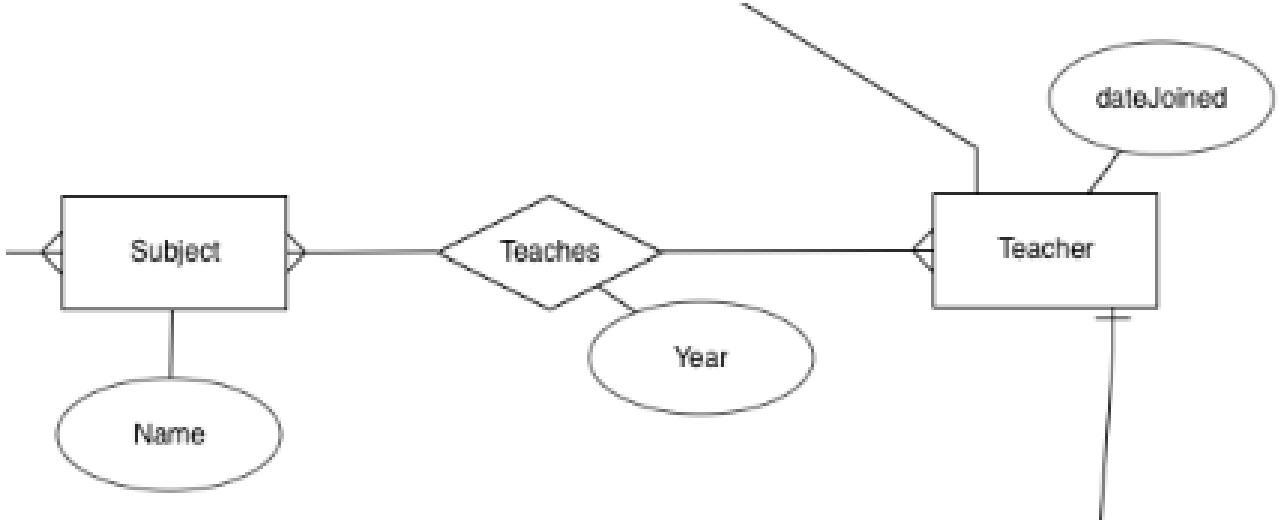
- N:N Relationship
  - Create a new relation that contains the ID from both entities



Student (ID, Name, Pet, Wand, dateEntered)
Subject (Name)
Studies (ID, Name, Grade , Date)

Representing Relationship Sets

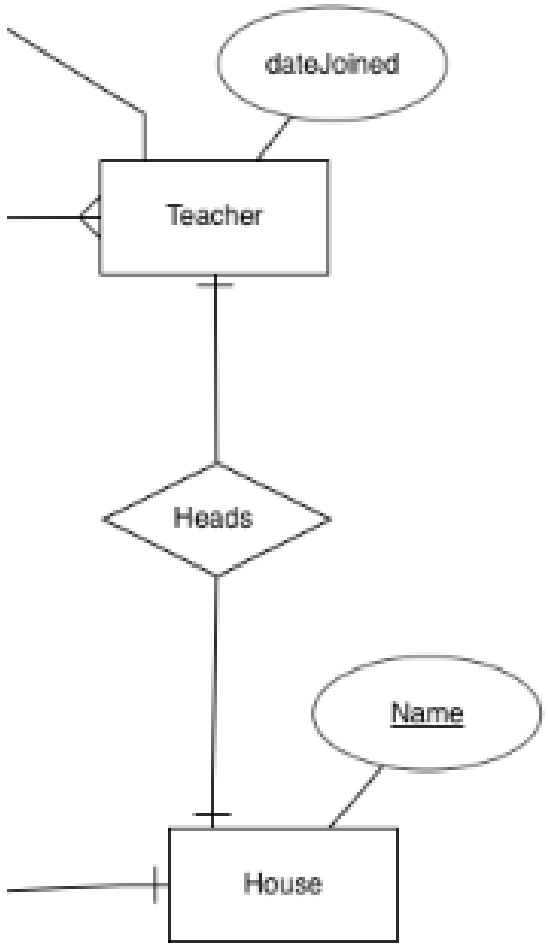
- N:N Relationship
  - Create a new relation that contains the ID from both entities



Teacher(ID, Name, Pet, Wand, dateJoined)
Subject (Name)
TeachingAssignment (ID, Name, Year)

Representing Relationship Sets

- 1:1 Relationship
  - To keep it simple and even for better performances at data retrieval, I would personally recommend using attributes to represent such relationship.



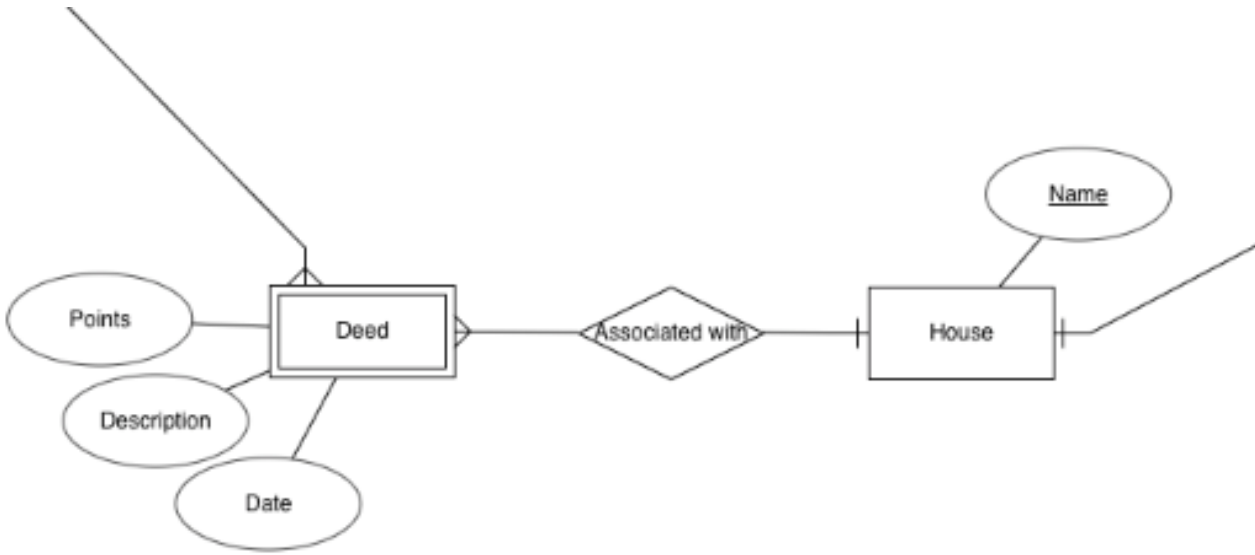
Teacher(TID, Name, Pet, Wand, dateJoined)
House (Name , TID)

Or

Teacher(TID, Name, Pet, Wand, dateJoined, HouseName)
House (Name)

Representing Relationship Sets

- 1:N Relationship
  - This is the tricky one !
  - On the Many side, add a foreign-key from the other relation



Deed (ID , Points , Description , Date/Time , HouseName)
House (Name)