

# 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  $a_1, \dots, a_n$  translates to table  $E$  with attributes  $a_1, \dots, a_n$
- Entity of type  $E \Rightarrow$  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 )

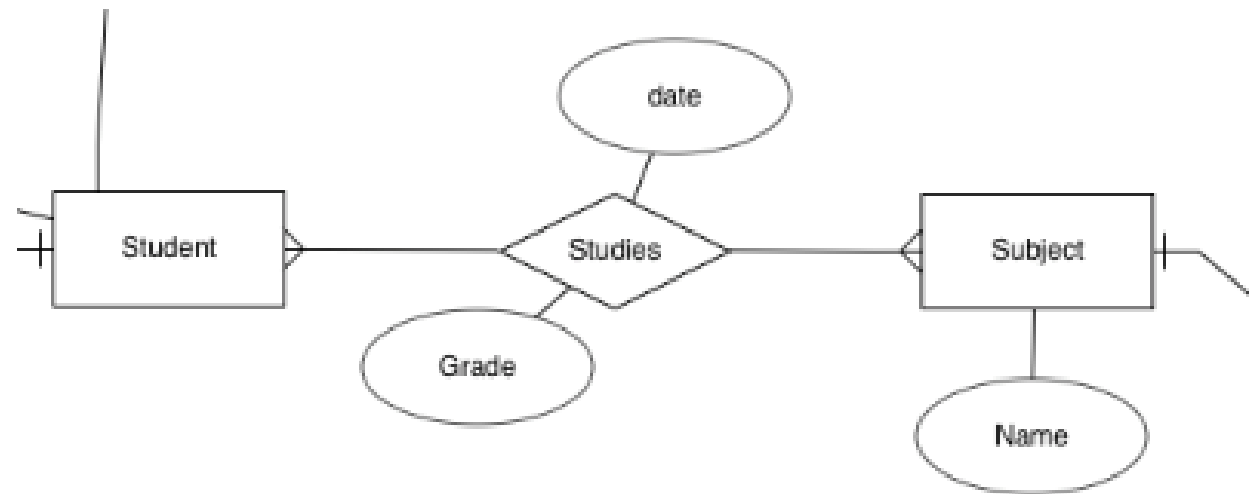
# Representing Weak Entity Sets

- 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



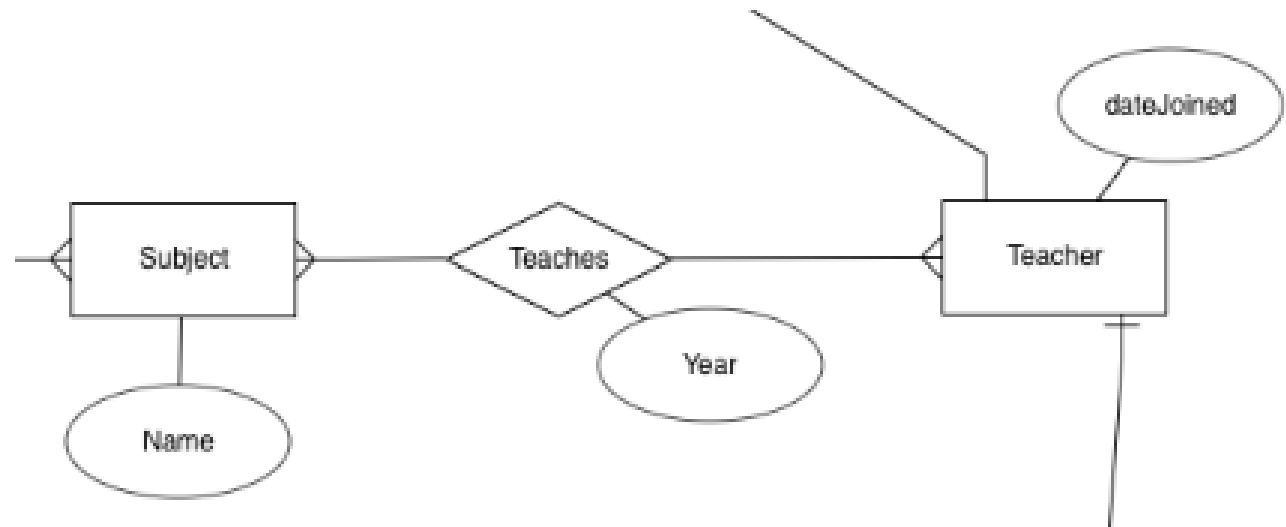
**Student ( ID, Name, Pet, Wand, dateEntered)**

**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.

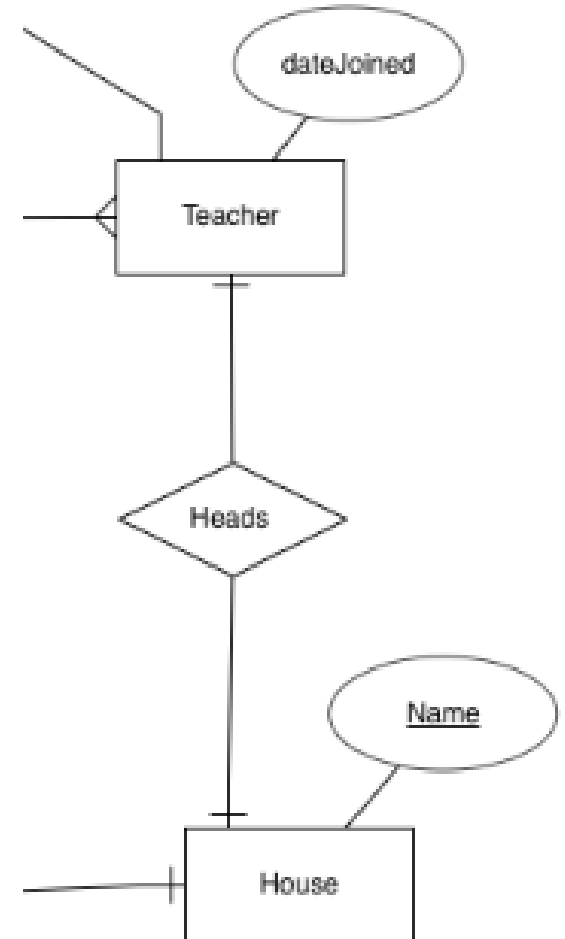
Teacher( TID, Name, Pet, Wand, dateJoined)

House ( Name, TID )

Or

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

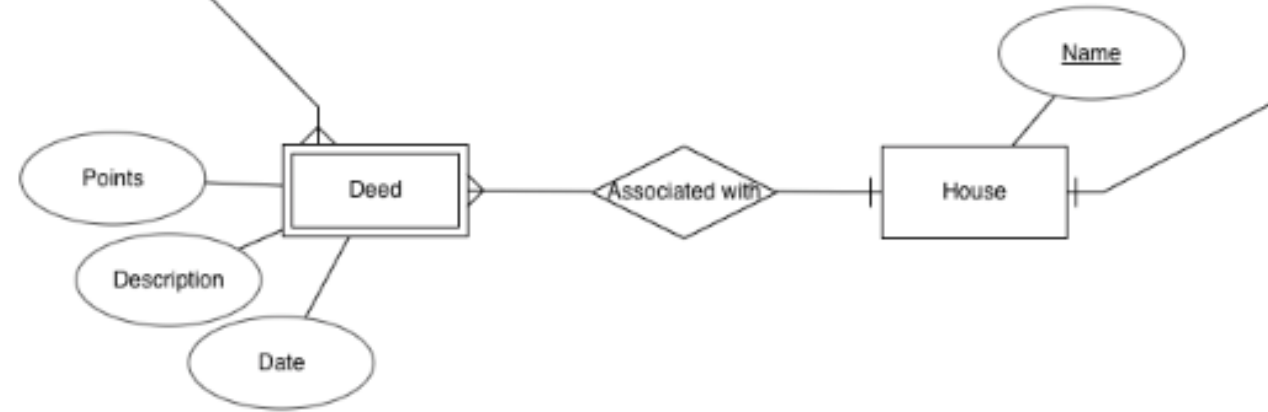
House ( Name)





# 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 )