

Data Modeling

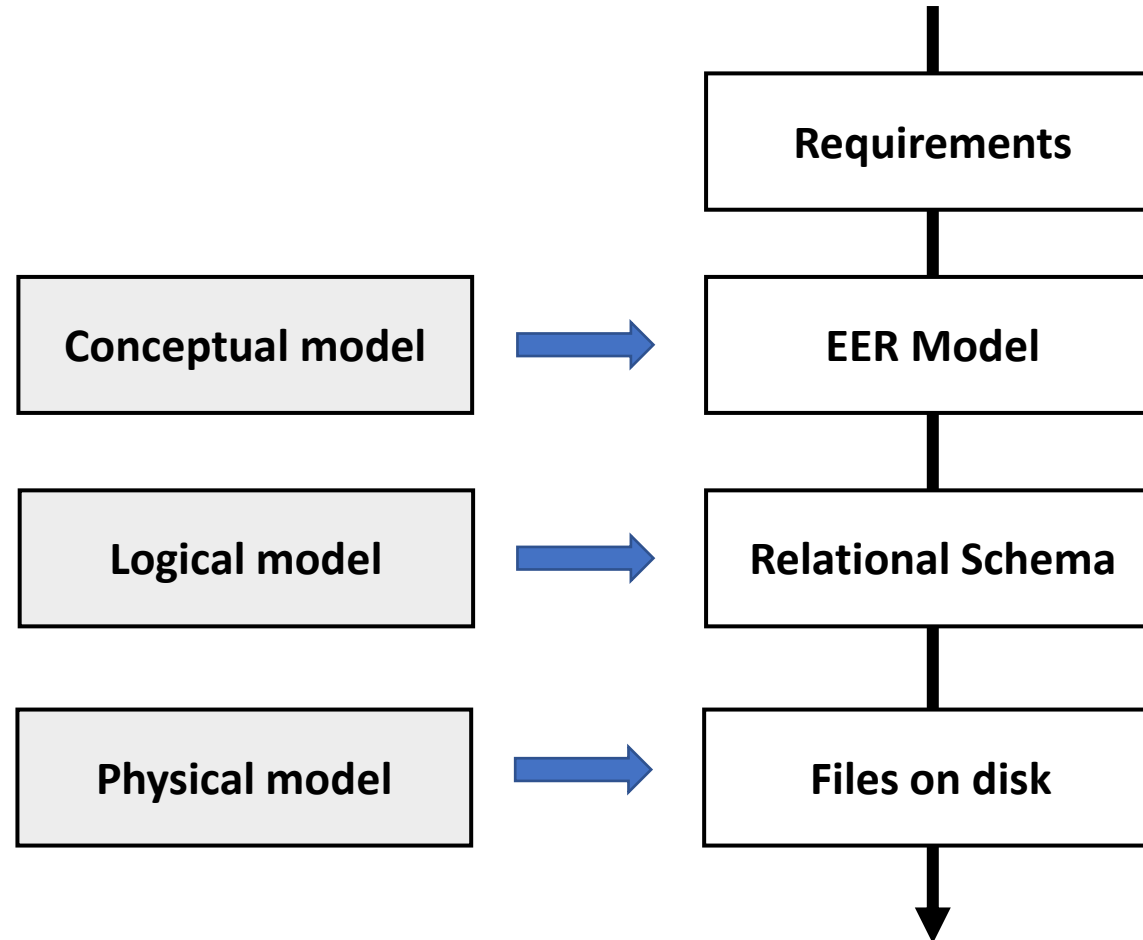
- Data modeling in software engineering is the process of creating a data model for an information system by applying certain formal techniques.
- Is the process of analysing and defining all the different data your business collects and produces, as well as the relationships between those bits of data.

EER Diagram

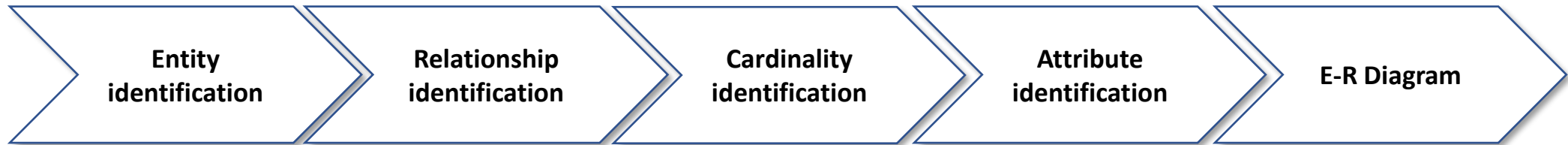
Data Modeling



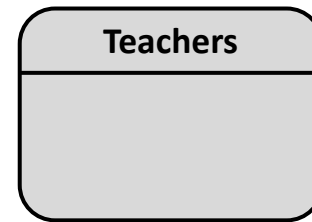
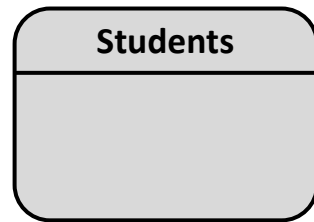
- Data models



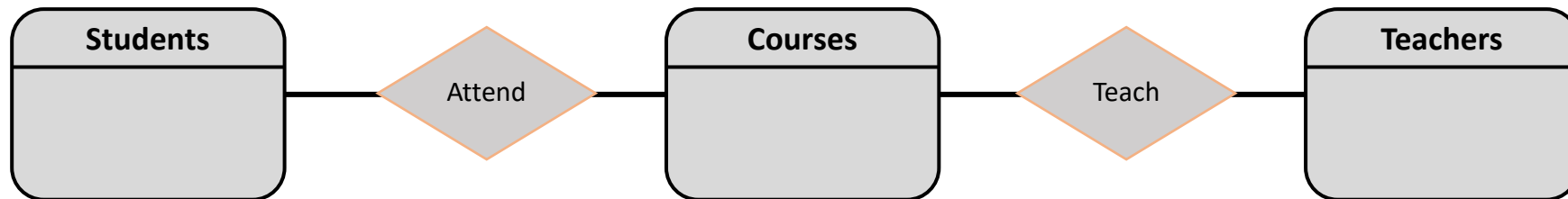
- Steps to create an EER diagram



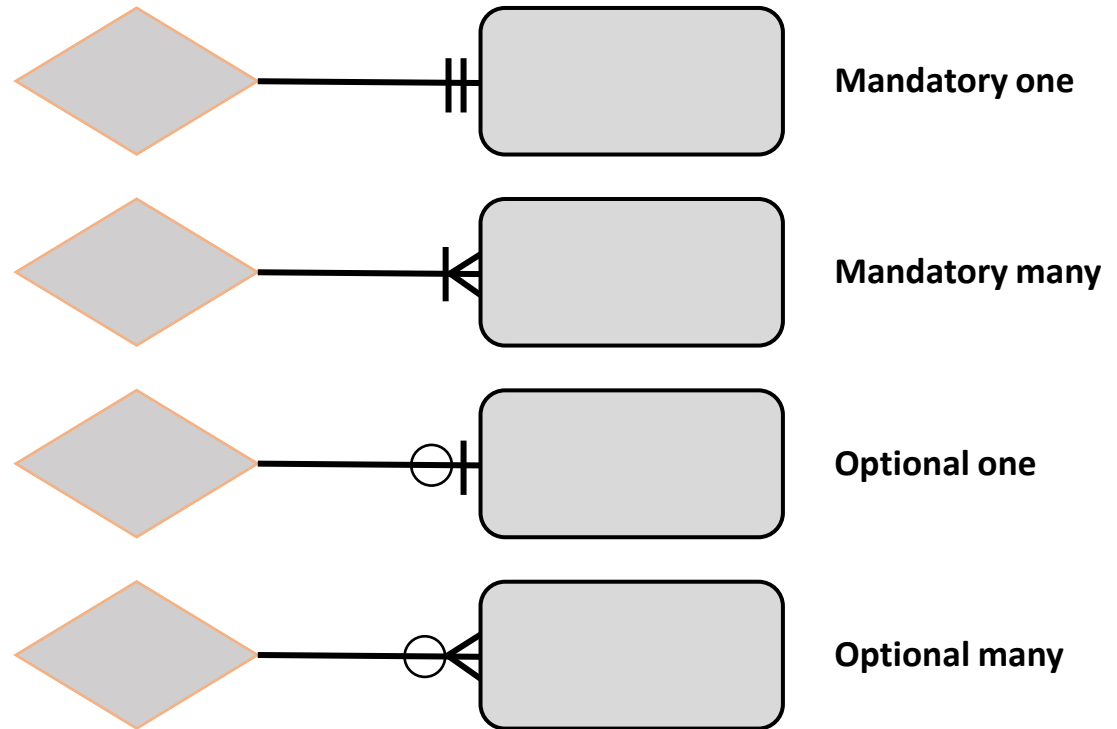
- Steps to create an EER diagram
- **1. Entity identification**



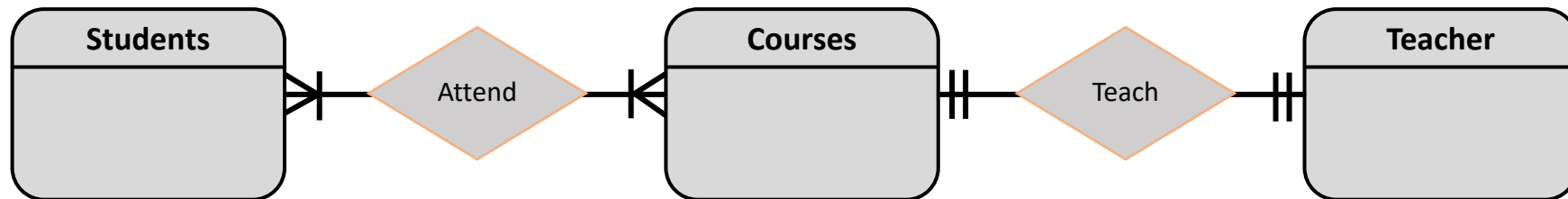
- Steps to create an EER diagram
- **2. Relationship identification**



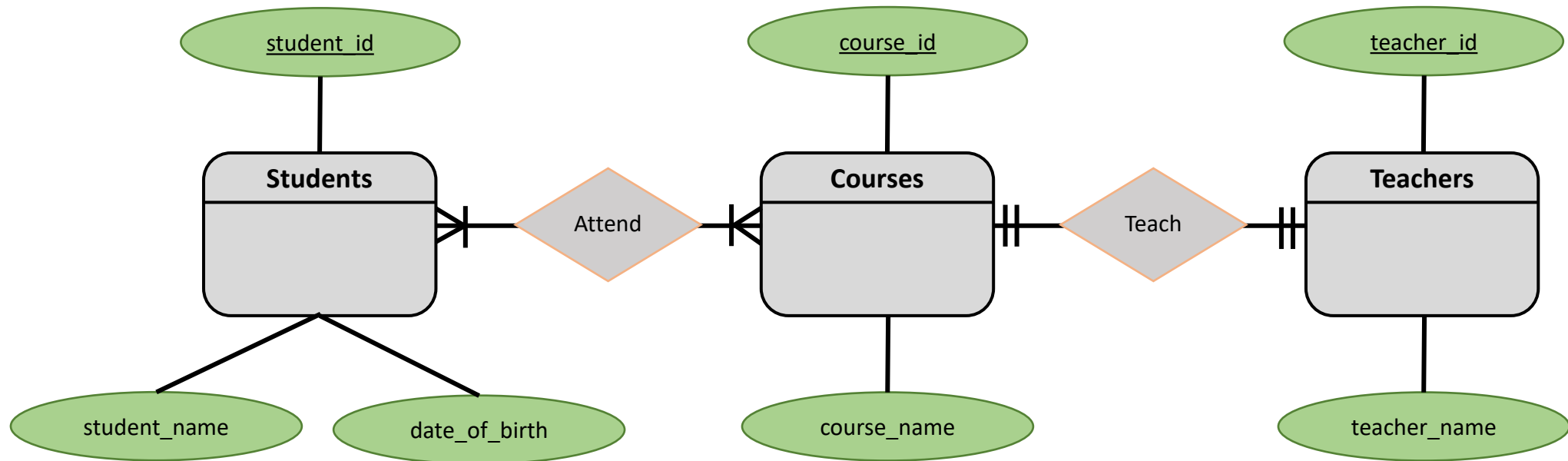
- Steps to create an EER diagram
- **3. Cardinality identification**
- Types of relations:
 - one-to-one
 - one-to-many
 - many-to-one
 - many-to-many



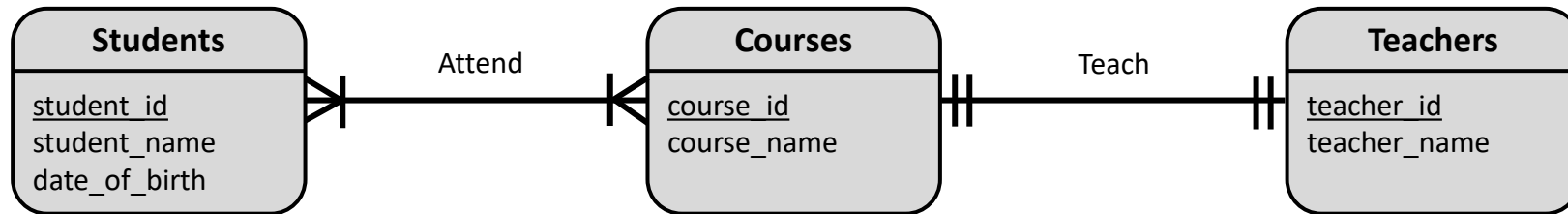
- Steps to create an EER diagram
- 3. Cardinality identification



- Steps to create an EER diagram
- **4. Attribute identification**



- Steps to create an EER diagram
- More modern notation, where relationships don't use a specific symbol, and the attributes are integrated inside the boxes of the entities:



- Steps to create an EER diagram
- 5. Because there is a many-to-many relationship between the entities Student and Course, which can create data redundancies/anomalies, we should create an additional entity that includes the primary keys from the two connected entities:

