

Keys in E/R diagrams (4.3)

- Entity sets will have one or more *keys*.
 - Customary to choose a *primary key* and underline the attributes.
- Possible for an entity set's key attributes to belong to another entity set in certain situations.
 - Is-a hierarchies
 - weak entity sets (later)

One perspective on real-world keys

- Multi-attribute and/or string keys...
- ...can be time consuming and sometimes may not guarantee a lack of duplicates.
 - movie(title, year, date-released, etc)
 - title + year = lots to type to identify a movie in SQL.
 - integer key movieID saves typing!
- ...break encapsulation
 - patient(first, last, DOB, etc)
 - Are these keys being transmitted in an insecure manner? Is this a security/privacy risk?
 - integer key patientID fixes this.
- ...are brittle
 - Name change? Two movies with the same name/year?
 - Unique integer ID always exists, never changes.

Referential integrity in E/R

- ***Referential integrity***: requires every value of an attribute in one relation to appear as the value of an attribute in another (or the same) relation.
- Enforced through multiplicity arrows
- Degree constraints can be added to further restrict multiplicity.

Try US Congress/Iron Chef handout