

1.a) Initial phase - characterize fully the data needs of the prospective database users.  
Second phase - choosing a data model

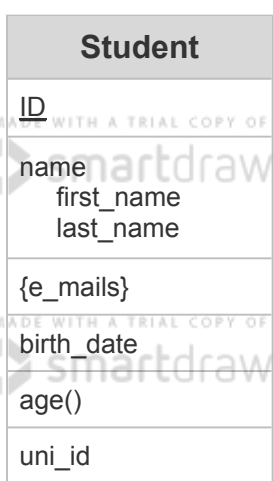
Final Phase - Moving from an abstract data model to the implementation of the database  
•Logical Design –Deciding on the database schema.  
•Physical Design –Deciding on the physical layout of the database

b) Entity Relationship Model

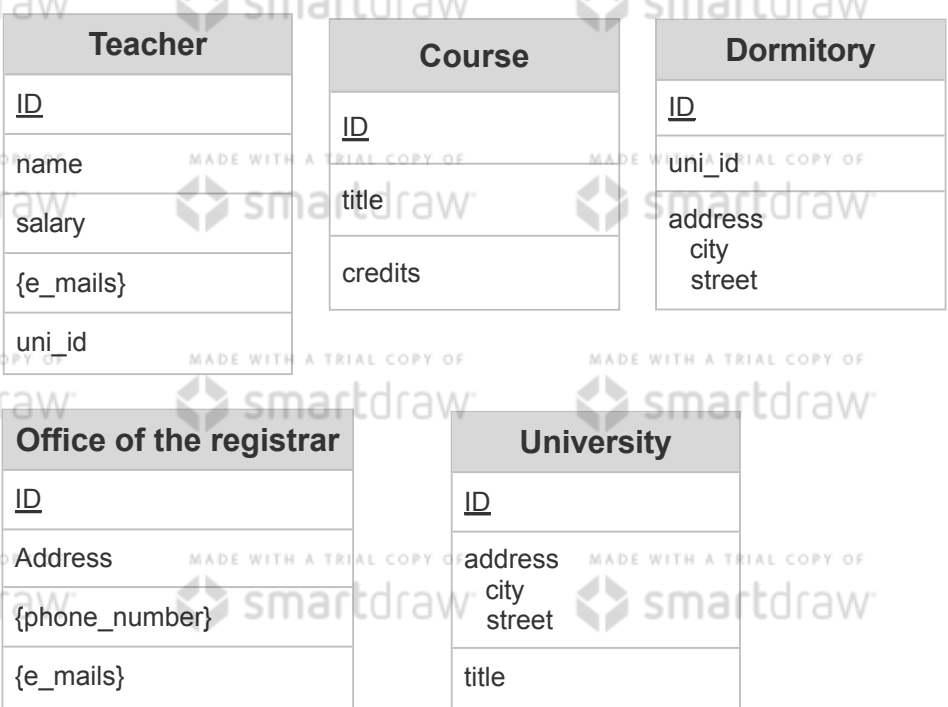
- Models an enterprise as a collection of entities and relationships
- Entity: a “thing” or “object” in the enterprise that is distinguishable from other objects
- Described by a set of attributes
- Relationship: an association among several entities

#2

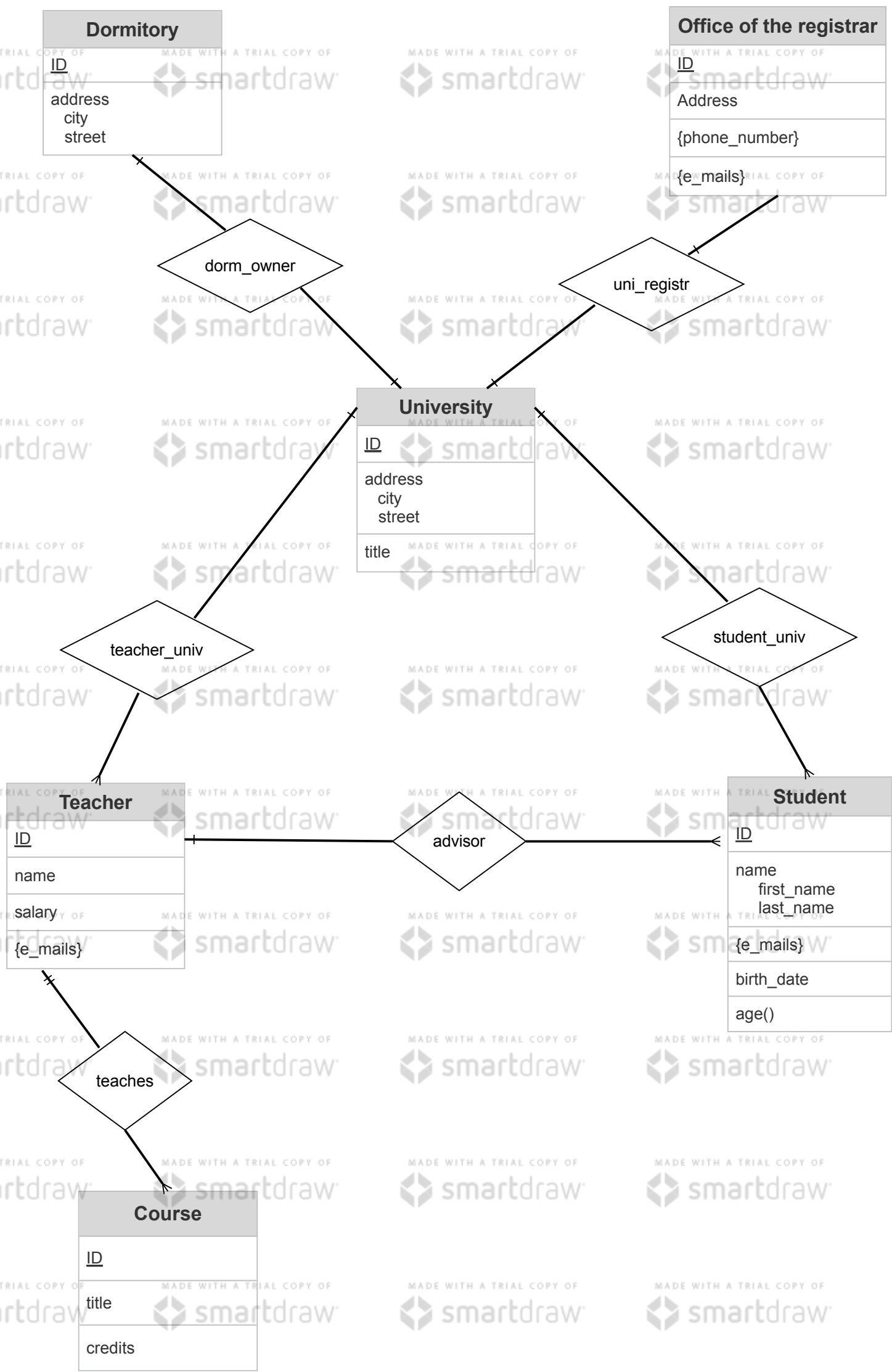
a)



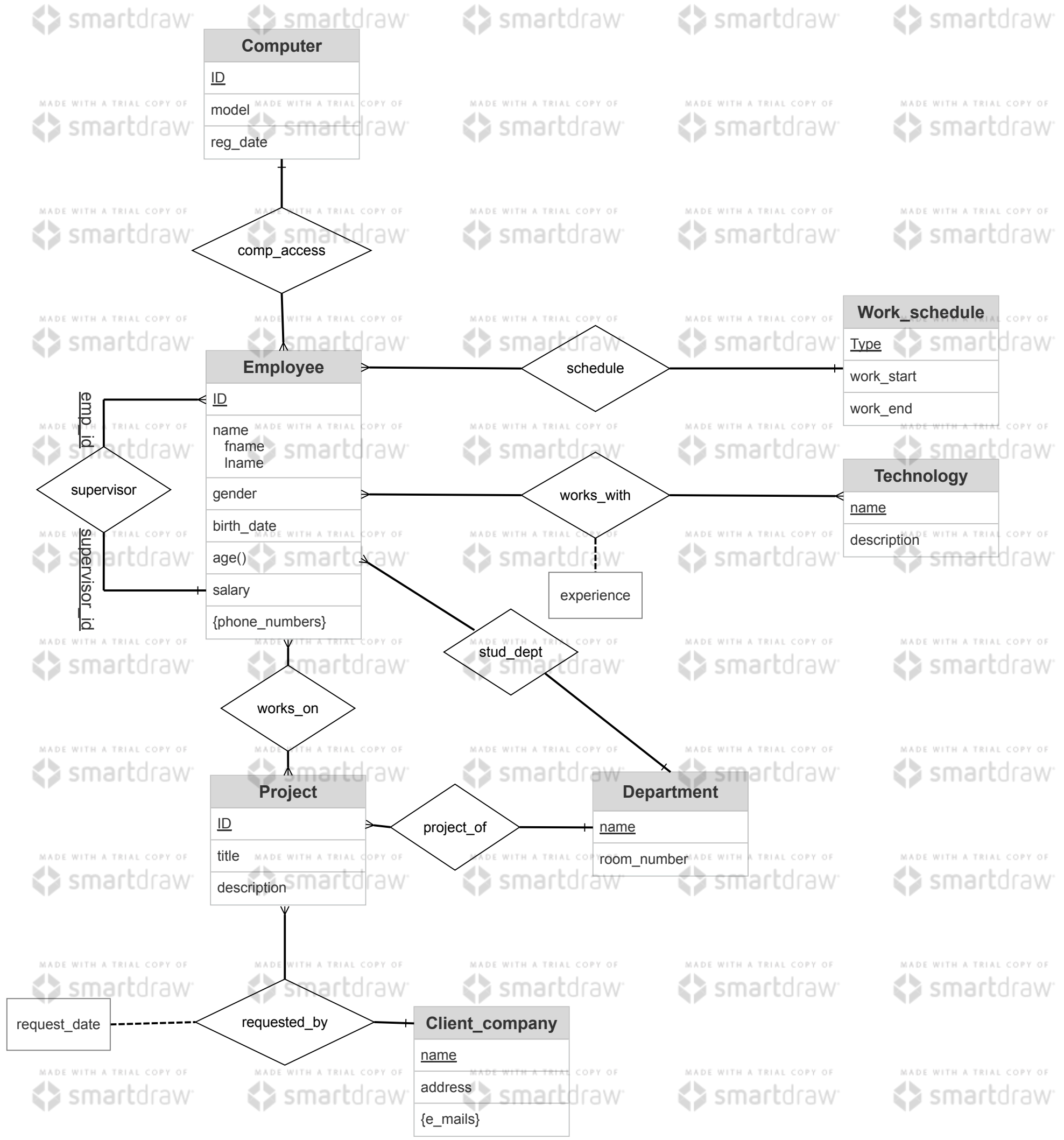
b)



#4

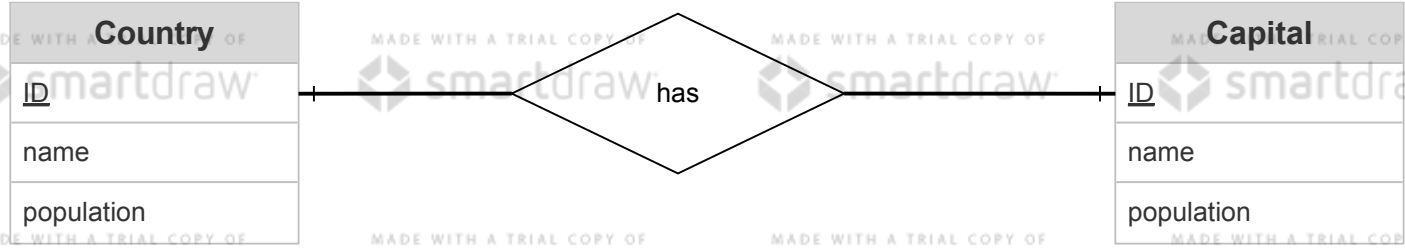


#5

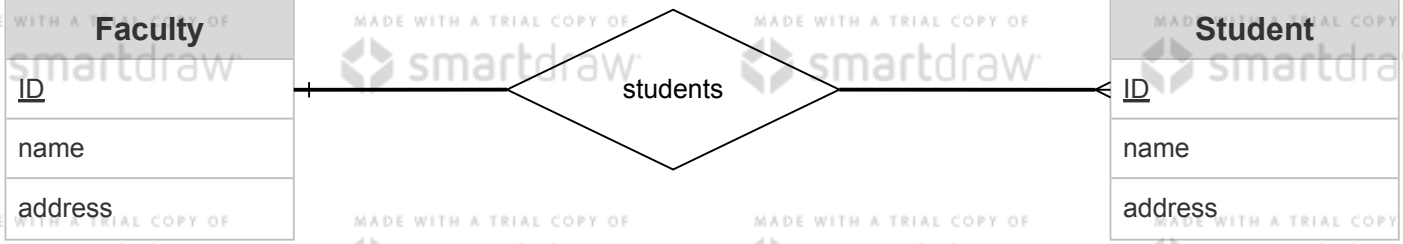


#3

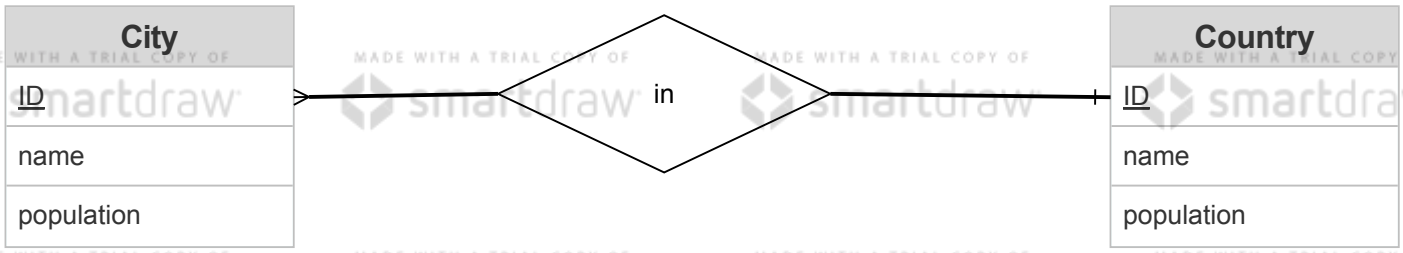
One-to-One



One-to-Many



Many-to-One



Many-to-Many

