DBS: Exercise 2 5/5/17

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1. Aufgabe: Grundlagen

(4 P) Geben Sie zwei Beispiele für einen Entitätstypen an.

A: One example entity type is user profile on a social networking site, that relates data about a single user. Another example is a rental car belong to a rental service

(4 P) Geben Sie zwei Beispiele für ein Attribut an.

A: Continuing with the user profile example, two attributes could be a) the email address used to create the profile and a username.

(4 P) Was ist ein Schlüsselattribut?

A: A key attribute is an entity attribute that must have a unique value amount the entities it is asssociated to. Thus a key attribute can also be used to identify a single entity. In the example above, the email address would be a key attribute for the profile entity, as each email address should only be linked at most one single user profile.

(2 P) Geben Sie ein Beispiel für eine nicht-rekursive 1-zu-N Relation an.

A: Consider the entity types a) Monkey, and b) Zoo, and the relationship type "belongs to". The relationship between the two entities is a 1-to-many relationship, because a monkey belongs to only one zoo, but a zoo may own many monkies.

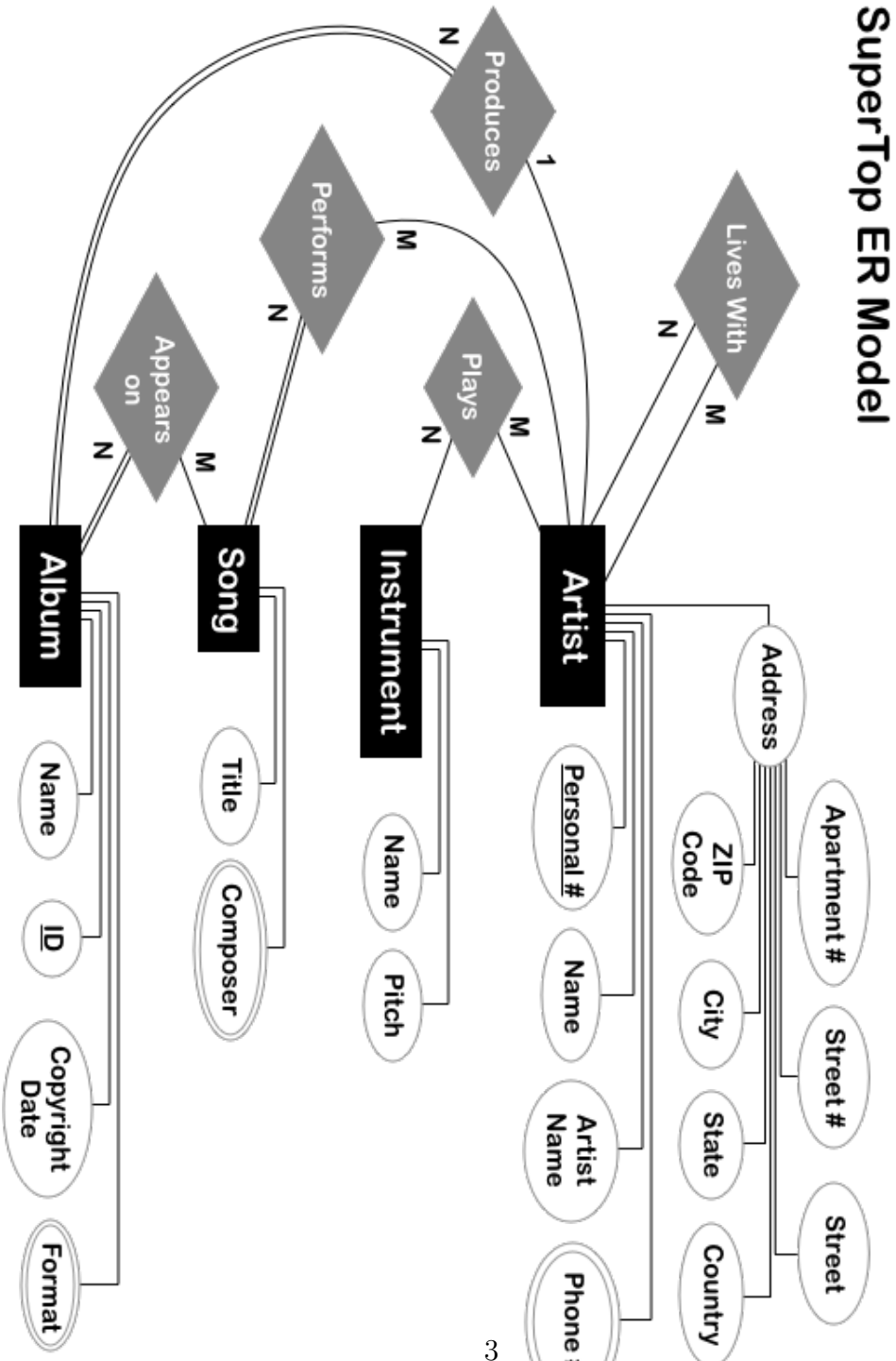
(2 P) Geben Sie ein Beispiel für eine nicht-rekursive N-zu-M Relation an.

A: Consider the entity types a) Book, and b) Person, and the relationship type "authored by". This is a many-to-many relationship because a book can have many authors, and person can have written many books.

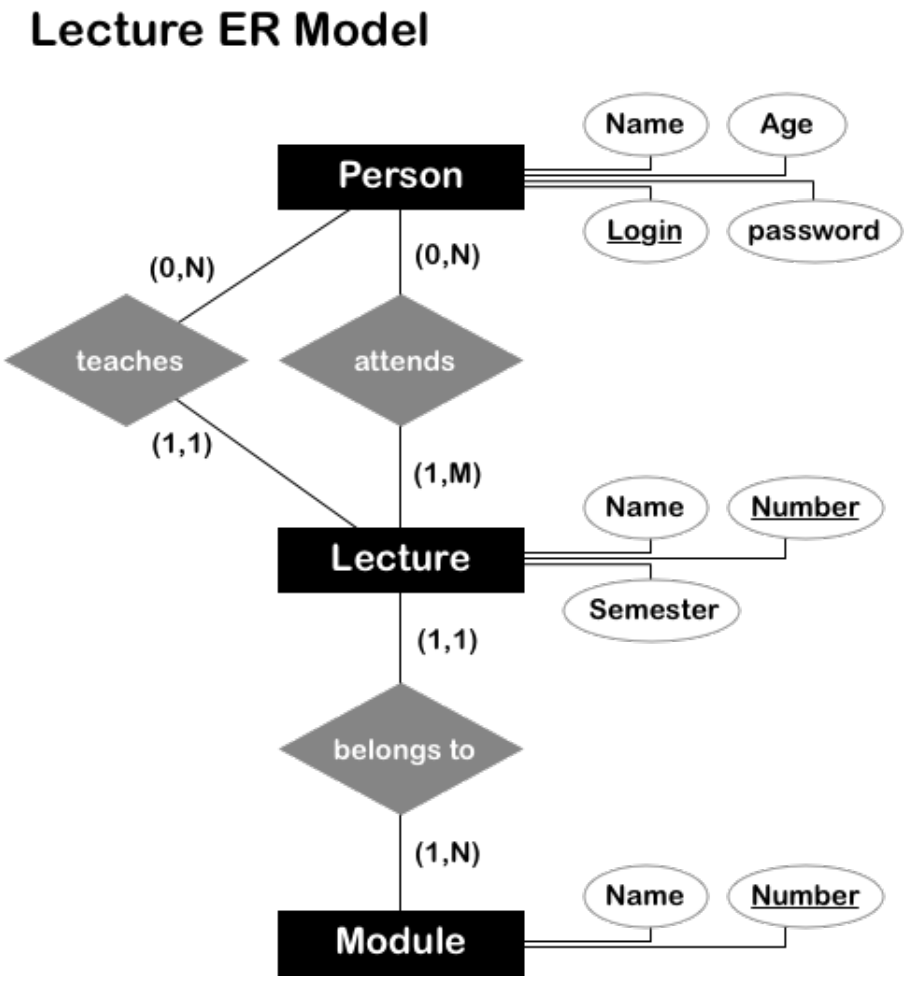
(4 P) Geben Sie ein Beispiel für eine rekursive Relation an. Wie sieht es mit dem Kardinalitätsverhältnis Ihres Beispiels aus?

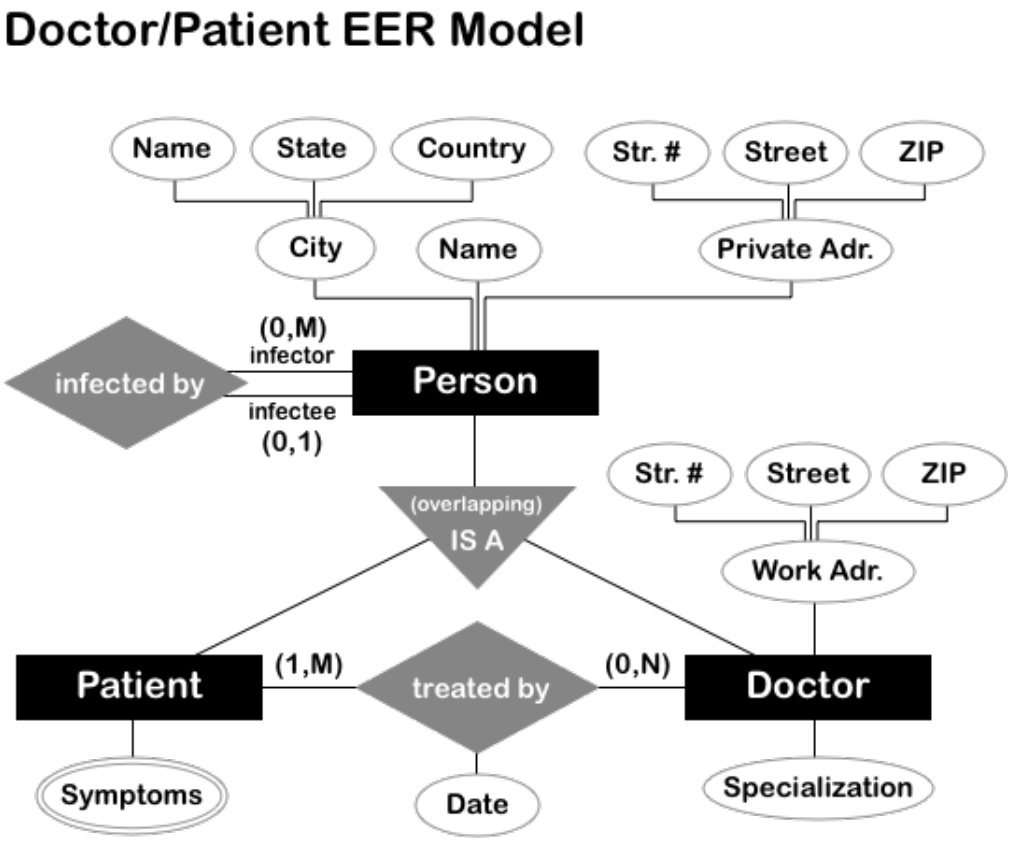
A: Consider the entity type Person and the relationship type "is a friend of". This is a recursive relationship because a person is a friend of another person. The cardinality ratio is many-to-many, because each person can have multiple friends.

2. Aufgabe: ER-Modellierung 1



3. Aufgabe: ER-Modellierung 2





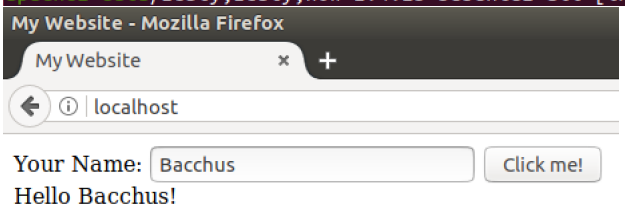
(5 P) Erklären Sie den Unterschied zwischen partieller und totaler Partizipation.

A: Partial participation of an entity type E to a relationship type R means that an entity can, but is not strictly require to, participate in the relationship. Thus there can be entities that do not participate in the relationship at all. On the other hand, total participation strictly requires that each entity of type E must participate at least once in a relationship of type R. Therefore, there exists no such entity of type E that does not participate in the relationship type R.

4. Aufgabe: Webserver & JavaScript

Install

```
alsa-utils/zesty,now 1.1.3-1ubuntu1 amd64 [installed,au
anacron/zesty,now 2.3-23 amd64 [installed,automatic]
apache2/zesty,now 2.4.25-3ubuntu2 amd64 [installed]
apache2-bin/zesty,now 2.4.25-3ubuntu2 amd64 [installed,
apache2-data/zesty,zesty,now 2.4.25-3ubuntu2 all [insta
```



Code

```
<!doctype html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>My Website</title>
    <script>
      function sayHello() {
        // get field value
        var name = document.getElementById("field
            ").value
        // if no value entered, use default
        if (name == "") { name = "anonymous" }
        // write message in div container
        document.getElementById("container").
            innerHTML = "Hello " + name + "!"
      }
    </script>
  </head>

  <body>
    <label for = "input">
      Your Name: <input id = "field" name = "
          input"/>
    </label>
    <!-- call sayHello function when button
```

```
        clicked -->
      <button id ="button" type ="button", onclick
        ="sayHello()">
        Click me!
      </button>
      <div id = "container"></div>
    </body>
</html>
```