Exercise 1

Look at the following (familiar) ER-diagram and create SQL DDL statements to create the respective tables.

Lösung:

```sql
create table city (name varchar(50),
                    state varchar(50),
                    primary key(name, state)
);

create table station (name varchar primary key,
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
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                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
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                      state varchar(50),
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                      foreign key(cityName, state)
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                      state varchar(50),
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                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
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                      foreign key(cityName, state)
                          references city(name, state)
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                      foreign key(cityName, state)
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                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
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                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
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                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
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                      foreign key(cityName, state)
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                      foreign key(cityName, state)
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                      cityName varchar(50),
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                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
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                      foreign key(cityName, state)
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                      foreign key(cityName, state)
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                      state varchar(50),
                      foreign key(cityName, state)
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                      foreign key(cityName, state)
                         references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
                      cityName varchar(50),
                      state varchar(50),
                      foreign key(cityName, state)
                          references city(name, state)
                      num_platforms int,
```
create table connects (from varchar references station,
    to varchar references station,
    trainNo int references train,
    departure date,
    arrival date,
    primary key(fromStation, trainNo)
);

Exercise 2

Look at the following ER-diagram. Think about different ways of how to transform these into a database schema.

Lösung:
Option one (inclusive):

    create table Bird (name varchar primary key,
        max_age int,
        wing_shape varchar);

    create table Dog (name varchar primary key,
        max_age int,
        has_fur boolean,
        is_good boolean);

    create table Cat (name varchar primary key,
        max_age int,
        has_fur boolean,
        shy boolean);
Option two (inherited):

```sql
CREATE TABLE Animal (name VARCHAR PRIMARY KEY,
                      max_age INT);

CREATE TABLE Mammal (name VARCHAR PRIMARY KEY
                      REFERENCES Animal,
                      has_fur BOOLEAN);

CREATE TABLE Bird (name VARCHAR PRIMARY KEY
                    REFERENCES Animal,
                    wing_shape VARCHAR);

CREATE TABLE Dog (name VARCHAR PRIMARY KEY
                  REFERENCES Animal
                  REFERENCES Mammal,
                  is_good BOOLEAN);

CREATE TABLE Cat (name VARCHAR PRIMARY KEY
                   REFERENCES Animal
                   REFERENCES Mammal,
                   shy BOOLEAN);
```