Exercise 1

Consider the entity relationship diagram from exercise sheet 2:

Create a relational schema out of the ER-Diagram. Underline keys and find appropriate data types.

Solution:

The un-refined translation yields the following relations for the entities in the model:

- City : { [name : string, state : string] } (1)
- Station : { [name : string, #platforms : integer] } (2)
- Train : { [trainNo : integer, #wagons : integer] } (3)

For the relationships in the model, we create the following relations:

- located_in : { [stationName : string, cityName : string, cityState : string] } (4)
- start : { [trainNo : integer, stationName : string] } (5)
- end : { [trainNo : integer, stationName : string] } (6)
- connects : { [fromStationName : string, toStationName : string, trainNo : integer, departure : date, arrival : date] } (7)