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\}  
- Station : \{name : string, #platforms : integer\}  
- Train : \{trainNo : integer, #wagons : integer\}  

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

- located_in : \{stationName : string, cityName : string, cityState : string\}  
- start : \{trainNo : integer, stationName : string\}  
- end : \{trainNo : integer, stationName : string\}  
- connects : \{fromStationName : string, toStationName : string, trainNo : integer, departure : date, arrival : date\}  