Exercise for *Database System Concepts for Non-Computer Scientist* im WiSe 19/20
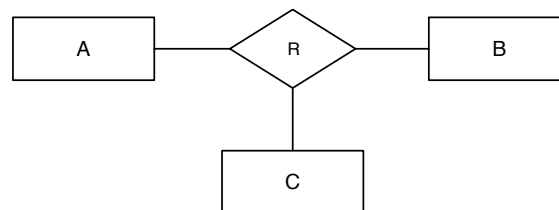
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http://db.in.tum.de/teaching/ws1920/DBSandere/?lang=en

Sheet 02

Exercise 1

Assume, that only the following partial function holds:

$$A \times C \rightarrow B$$

Label the diagram with functionalities.

Now, think about the following question: How can you derive functionalities out of partial functions and vice versa.

Exercise 2

iBike is a new free-floating bike sharing app in Munich. Customers are able to rent and return bikes wherever they find them within the city limit.

- Model an ER diagram for the data schema for the iBike app. It should include *Customers*, *Bikes*, and *Rides*. For analysis purposes, we want to keep track of start and end time as well as pick-up and drop-off locations of rides. The model should include functionalities. Think about why the min-max notation would not provide additional value in this scenario.

- After a successful deployment in Munich the iBike company expands to other cities. Any given bike belongs to exactly one city. A city is identified by a name and has a population count. Modify the ER diagram accordingly.