

## Programming Part

For the following exercises, you must use your “zip” table!

1. Your colleague from the marketing team needs some analysis.

- a. He is asking you to do the following overview for him:

ZIP_short	qty
-----------	-----

In zip\_short he needs just the first two digits of the zip.

To select the first two digits of an attribute you have to use ...

... `LEFT (attributename, n) ...`

n stays for the requested signs qty (e.g. 2 for two signs)

- b. Create an overview with all unique city names with the qtys, how often you will find the city in the table zip – ordered by the quantity descending!
    - c. Create another overview (similar to b) where you get to see all cities which are only once in your table!
    - d. Your colleague saw in the last selection you gave him (Exercise 4.6) that there haven't been any zip\_codes from Frankfurt. Can you give him feedback why and create a new selection where you will see all zip\_codes from

Berlin

Frankfurt

Aachen

Now it's your decision which SQL command you are going to use!

- e. Show your colleague the TOP three cities (highest).  
TOP means – with the highest quantity of zip\_codes!

To let you show just the first three results of your SQL statement you have to use the following command at the end of your statement ...

... `LIMIT n`


n stays for the qty of datasets you want to see


## Theoretical Part

2. Write down the bullet points of a relational database model and explain them in your own words!
3. What is a primary key and which important property should it have?
4. Explain in your own words what is meant with „Irreducibility or minimalism in relation to the uniqueness“ and make me an example.
5. Look at the following table and write down three candidate keys.
  - a. Discuss the three suggestions and write about their advantages and disadvantages.
  - b. Which candidate key is you favorite? Explain why?

ID	Nachname	Vorname	Geburtstag	Geburtsort	Emailadresse
1	Maffay	Peter	01.01.1962	Dortmund	pm@gmx.de
2	Türk	Andreas	04.10.1976	Köln	TA@web.de
3	Sciurti	Lucia	24.06.1984	Langen	sl@yahoo.de
4	Friedrich	Frank	01.01.1962	Köln	ff@arcor.de

6. Why do we need primary keys?
7. Which advantages or disadvantages have the NULL values?
8. The following table was sent to you. Now you must update the structure so, that you won't have NULL values in the attribute "Letztes Bestelldatum" ("last orderdate") and "Erstes Bestelldatum" ("first orderdate"). Create a concept like the one you have seen in the lecture.



Kunden	
	ID
	Firmenzeile
	Anrede
	Nachname
	Vorname
	Straße
	PLZ
	Ort
	Telefonnummer
	Email
	Letztes Bestelldatum
	Erstes Bestelldatum