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## Exercise 13

### Application programming

For this exercise sheet, please use the prepared Java code (IntelliJ project) from the Learning Campus:

DB-Exercise13-KH-Java Code.zip.

#### Task 1: JDBC

- a) Unzip the Java code and open the IntelliJ project. In `JDBCExample.startup`, change the connection parameters to your user name and password. Log in to the database with your access data and first run the `createAutos.sql` script from the zip file, in order to create the Autos (cars) table.
- b) Thereafter, modify the code of `JDBCExample.startup` so that multiple cars are created and these are then saved in the database. Then use `resultSet` to read these vehicles from the database again, and output them line by line to the console.

#### Task 2: JPA

- a) First modify `persistence.xml` appropriately. Then look at the `PizzaShop` package. Expand the `Pizza`, `Rezept` and `Zutat` (Pizza, Recipe and Ingredient) classes so that they can be used in the JPA persistence framework. Then create a Margherita pizza with 100g dough, 400g cheese and 250g tomato sauce and save it in the database.
- b) After that, load all the pizzas from the database and calculate the calories per pizza. Output your results to the console.