You should work in teams of two, but every team member must have the ability to explain the solution.

Assignment 8: Subselects

A) Consider the tables from assignment 7. Create SQL statements to display information about the most expensive and the cheapest articles! (Hint: start displaying just the highest and lowest price)

Optional: Can you achieve this in one single SQL statement?

B) Consider assignment 4. Delete Bob's father with a SQL statement that uses only 'Bob' as input!

For every task, the report shall contain the SQL statement(s) and the output from Oracle.

Assignment 9: Transactions

For this assignment, you need <u>two</u> distinct sessions (connections) to Oracle. This can be achieved by two *unshared* connections in sqldeveloper (an unshared connection can be opened by typing Ctrl-Shift-N in the SQL pane). Alternatively, you can use two instances of sqldeveloper, accessing the same database schema (log on as the same user).
The two database sessions are denoted as <u>session1</u> and <u>session2</u>, resp.

For every task, the report must contain a **table** consisting of the statements and output from Oracle for session1 and session2. Please make sure that the temporal order of the commands and output is clear in the report!

Example:

Time	session1	session2
1	select … result:	
2		select … result:

A) Run the following DDL script in session1:

```
CREATE TABLE tab10
  (id integer CONSTRAINT pk_tab10 PRIMARY KEY, n integer);
```

When is the table visible in session2?

B) Insert the following tuples in session1: (1,1), (2,2), (3,3)

What is the table's content visible in session2 before and after you commit your changes in session1?

C) In session1, update the value of n to 33 for the tuple with the id 3. Then rollback the transaction.

What is the value of n (id=3) visible in session1 before and after the rollback?

What is the value of n (id=3) visible in session2 before and after the rollback?

D) If you have enough time: Try to provoke a *deadlock* situation between session1 and session2.

What is the reaction of Oracle?

What does happen in both sessions when you end the failed transaction?

Assignment 10: JDBC

Please consider the database from assignment 7 (lab 3) and the provided Eclipse project (Lab4.jar). The project can be imported into Eclipse as followed:
1. File → Import → Existing Projects into Workspace→ Next
2. Select archive file → Browse (Select file) → Finish

The Java code shall connect to the HAW Oracle database and work on the customer-order-article tables known from assignment 7.
Please note that the Oracle JDBC driver "ojdbc6.jar" already has been added to the class path (If you want to use MySQL, you need to use another JDBC driver and connection string)!

Task: The Java code contains several "TODO:" markers (also visible in the View "Tasks"). Fill in appropriate Java code there!
Hint: Fill in the exception handling code first, then try connecting to the DB!

Please present your running application to me during the lab.

The report shall contain the content of DbHandler.java and the console output of the application.