Week 17 - JDBC

Topics covered in this week

- Basic SQL and RDBMS
- Connecting to the database
- Statements
- Handling the results
- JDBC transactions
- ACID
- SQL injection

Reading material

- https://docs.oracle.com/javase/tutorial/jdbc/overview/database.html (Basic SQL and RDBMS)
- https://docs.oracle.com/javase/tutorial/jdbc/basics/connecting.html (Driver Manager)
- https://docs.oracle.com/javase/tutorial/jdbc/basics/sqldatasources.html (Datasource)
- https://www.tutorialspoint.com/jdbc/jdbc-statements.htm (Statements)
- https://docs.oracle.com/javase/tutorial/jdbc/basics/retrieving.html (Handling the results)
- https://docs.oracle.com/javase/tutorial/jdbc/basics/transactions.html (JDBC transaction)
- https://en.wikipedia.org/wiki/ACID (ACID)
- https://en.wikipedia.org/wiki/SQL_injection (SQL injection)

Homework

Difficulty	Problem	Notes
EASY	In our financial institution we need to be able to easily retrieve information from the database for reporting purposes. The following scenarios have been requested by our legal team, and need to be available as soon as possible: • list all our clients • retrieve the balance of a client with a given username • clients that have lots of money are in a different legal category, so we need to be able to get a list of all clients that have a balance over 100,000	
MEDIUM	A client's balance is influenced by the financial operation that he performs such as paying the bills or receiving a salary. Every time a client performs such an operation we need to record it and adjust his balance. Please implement this feature in our code base. You will be given the details of an operation and you need to update the database accordingly. Keep in mind that there are 2 tables that need to be updated	
EASY	We are currently moving towards a service oriented architecture, so we would like to be able to get information from the database over HTTP. To do this we will need to dynamically pick up what tables and columns are in the database. Please create a small proof of concept program that will print out to console the database name, database tables and their columns.	