

Programming III

Laboratory 12

Objectives

- working with databases and JDBC API

Database installation. Eclipse configurations

1. Database installation
 - a. Getting database server:
 - a) Download Derby server:
http://db.apache.org/derby/derby_downloads.html
 - b) Unzip database server
 - b. Start database server
 - a) Open a command prompt in Windows OS (press CTRL+R, then write cmd) (or a terminal on Linux OS) and enter server bin directory (using cd command)
 - c. Enter the command: `startNetworkServer.bat` to start the server on Windows OS or `./startNetworkServer` on Linux OS
 - d. [Optional] Create the DB or just use ij tools like sql client
 - i. Open a command prompt in windows or a terminal on linux ij. Go to server lib directory `java -jar derbyrun.jar ij`
 - iii. Type the following command in order to connect: `CONNECT 'jdbc:derby://localhost:1527/exemplu;create=true'`;
2. Eclipse configurations
 - a) Create a new project
 - b) Create a lib directory at the same level with src directory
 - c) Copy into the jar files `derby.jar` and `derbiclient.jar` from server lib directory
 - d) Add at classpath this jars
 - A. Right click on project name
 - B. Select menu option Properties
 - C. Select option Java Build Path
 - D. Select the tab Libraries
 - E. Press Add button and select the two jars from lib directory
 - F. Press Ok Button
 - G. Copy the classes from the site to src directory

Exercises

1. Create an application that manages a database that contains a table Receipts. Each Receipt has an ID, a code, a client, a contractor, an amount and a date. Realize the following requirements on receipt table:
 - a) Create a function that allows the display of all receipts from table

- b) Create a function that allows a receipt creation
- c) Create a function that displays the receipts from a period of time
- d) Create a function that allows the update of a receipt
- e) Create a function that calculates the values of all receipts paid to a contractor in a year
- f) Add a table Client that contains distinct entries with client names. Refactor the database in order to link the Receipt table to Client table.
- g) Provide a GUI for visualizing the tables.