

## Topic 6 – Spring Security – Homework

This document defines homework assignments from the “Java Web Development” course. Please submit the homework as single **zip / 7z** archive holding the source code of all below described problems.

### Problem 1 – Spring MVC Maven project

- Create new Spring MVC Maven project.
- Deploy the project to the Tomcat server.
- Use the created project as base for the remaining of the homework.

### Problem 2 – Web Bank

- Create new Bank Register page containing the following:
  - Table with columns:
    - Username
    - Account Number
    - Current Amount
    - Account Currency
  - “New Account” button for creation of new accounts leading to page with the following:
    - Form for input:
      - Account Number
      - Initial Amount
      - Account Currency
    - Submit button – creates new account in the backend (if the account doesn’t exists) and returns to the register page
  - “Operation” button for deposit/withdraw operations leading to page with the following:
    - Form for input:
      - Account Number
      - Operation – deposit/withdraw
      - Amount
      - Currency
    - Submit button – returns to the register page, finds the account and makes the correction if:
      - Account exists
      - Withdraw doesn’t leave the account amount less than 0
- Create new bank account structure keeping the accounts of the users
  - Allow creation of new account
  - Allow deposit and withdraw operations as per the above conditions
  - Allow currency exchanges (keep the account in some currency, create exchange rates structure and allow deposit/withdraws to be in at least 2 more currencies)

## Problem 3 – Security

- Add Spring Security to the project
- Configure the authentication manager and provider with custom UserDetailsService that authenticates and authorizes the users
- Disabled csrf or include it in the login page and the logout option
- Create structure to keep users and the following types of authorities:
  - ROLE\_USER
  - ROLE\_BANK\_EMPLOYEE
- Create custom Login page
- Create logout option (for example button in the register page)
- Secure the application:
  - Login page is accessed by anyone
  - Register page is accessed by authenticated users:
    - Users with ROLE\_BANK\_EMPLOYEE sees all accounts
    - Users with ROLE\_USER sees only their own accounts (accounts should be linked to users)
    - “New Account” button can be seen and used only by users with ROLE\_BANK\_EMPLOYEE
    - “Operation” button can be seen and used by authenticated users