The Mandatory Programming Assignment
INF5040 Autumn 2008

The mandatory assignment is to develop a distributed application that models a small e-banking application. The system consists of a client (JSP), a servlet for processing client requests, a server that consists of one or more EJBs, and a database.

The system has two main features:

1 - Creating a bank account
2 - Transferring money from one account to another account.

Technical features:

1. Bank account Creation:

   Use Java Persistence (hint: Entity Manager and entity beans)

2. Money transfer:

   Basically this action should be run in the context of a **Transaction** in order to preserve the consistency of data (amount of money transferred).

   To learn the importance of using transaction the money transfer should be developed in three following ways:

   – Successful transfer within the transaction (without any exception)

   ```
   Start transaction
      withdraw amount X from account A
      deposit amount X to account B
   End Transaction
   ```

   – Unsuccessful transfer within the transaction (with exception)

   ```
   Start transaction
      withdraw amount X from account A
      If (true){
        throw Exception e
      }
      deposit amount X to account B
   End Transaction
   ```

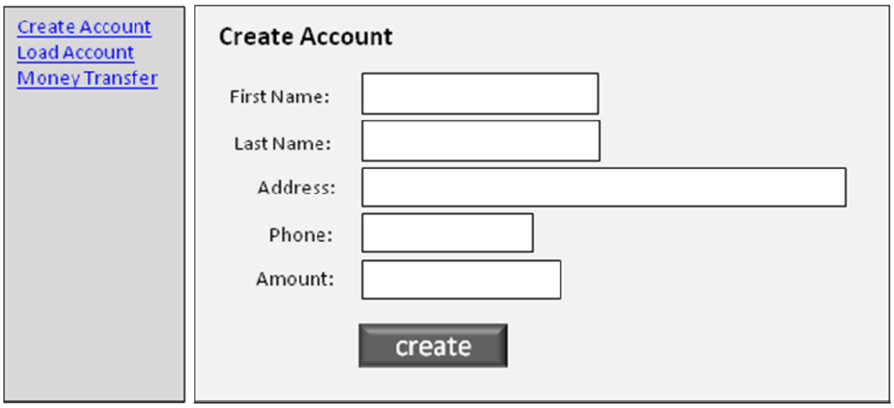
   – Unsuccessful transfer without transaction

   ```
   withdraw amount X from account A
   If (true){
     throw Exception e
   }
   deposit amount X to account B
   ```

Your tasks:

1. Client (JSP)

   A client for creating an account:



Create Account

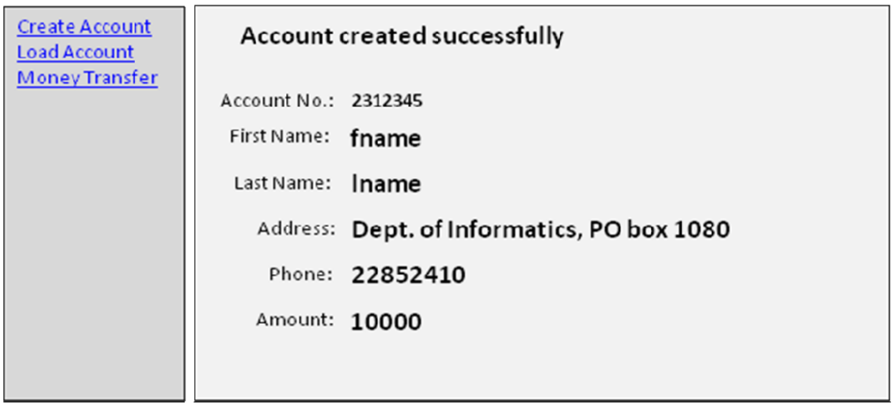
First Name:

Last Name:

Address:

Phone:

Amount:



Account created successfully

Account No.: 2312345

First Name: fname

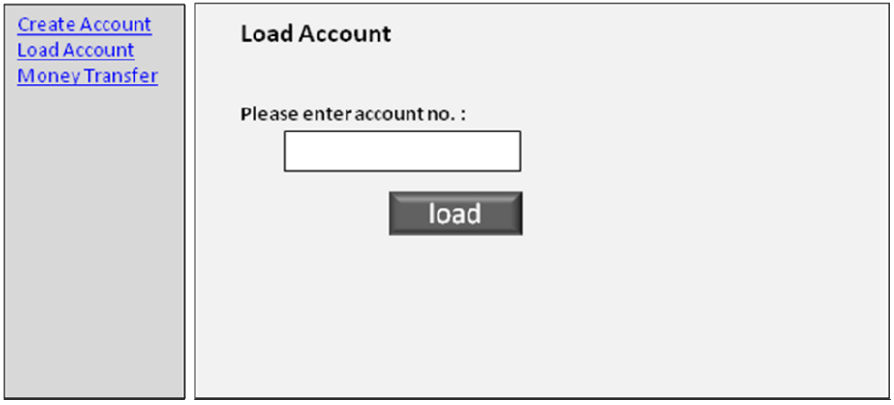
Last Name: lname

Address: Dept. of Informatics, PO box 1080

Phone: 22852410

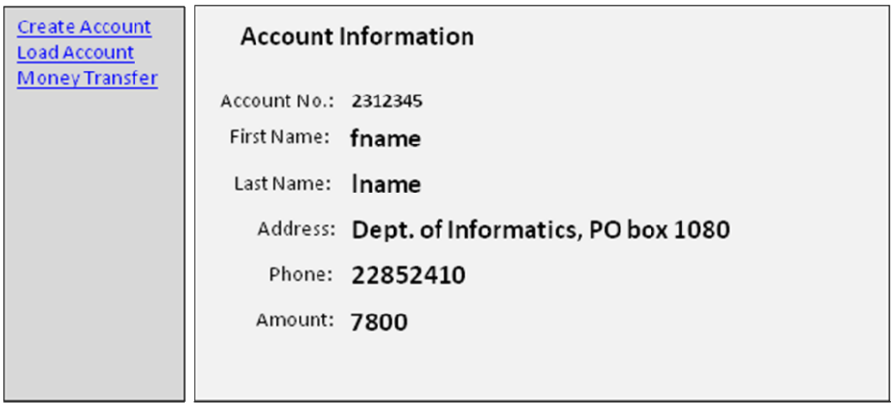
Amount: 10000

A client for loading an account:



Load Account

Please enter account no. :



Account Information

Account No.: 2312345

First Name: fname

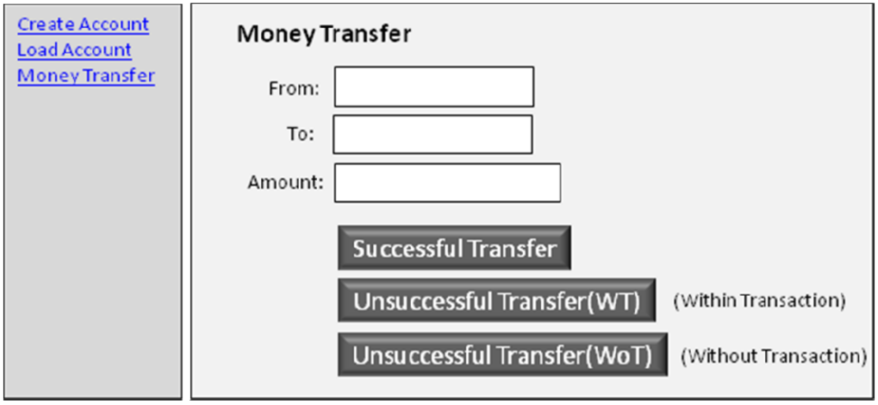
Last Name: lname

Address: Dept. of Informatics, PO box 1080

Phone: 22852410

Amount: 7800

A Client for money transfer



2. A Servlet for receiving client side actions (1-create account, 2-load account, 3-successful transfer, 4-unsuccessful transfer(WT), and 5-unsuccessful Transfer(WoT)) and forwarding them to the SessionBean.
3. One Session Beans to handle the data:
   Use Java Persistence: Entity Manager and entity beans

Development Tools:

Application Server: JBoss
IDE (Integrated Development Environment) : NetBeans, or other tools that you prefer
Database: Hypersonic SQL embedded in JBoss

Links for download and further details are available at the group homepage.

Deliverables:

Please send the following artifacts to amirhost@ifi.uio.no

– A description of your design and implementation (Word, plain text, or preferably PDF), which should include a user guide for compiling and running your distributed application.
– Everything that is needed to compile and run your distributed application (in a zip archive), such as:
  - source code (should be well commented)
  - build.xml file (preferably only one file for the entire system, that can compile, deploy, execute the client(s), and clean up everything when finished)
  - *(jar-file(s))*
  - …

Announcements requested by the Department of Informatics:

– This assignment is mandatory and must be approved to take the INF5040 exam.
– All students must read the departmental guidelines for written assignments:
  Norwegian: http://www.ifi.uio.no/studinf/skjemaer/erklaring.pdf
  English: http://www.ifi.uio.no/studinf/skjemaer/declaration.doc

Deadline: 23:00 on Sunday the 19th of October 2008 (19.10.08)