Distributed Systems Paradigms
Group Assignment
Chat Server

Grupo de Sistemas Distribuídos
Universidade do Minho

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General Info

- Each group must have up to 3 students;
- The assignment must be delivered until 8 January 2016;
- Both the source and a report, up to 6 pages in pdf format, should be delivered;

Summary

Implement a distributed transactional system that stores bank account balances in multiple servers and allows atomic transfers. The service should allow each of the servers to be re-initialized at any time and enforce serializability.

Client

The client should be written in Java and allow a single operation: transfer between two accounts. It receives three parameters (two account numbers and a quantity) and prints the confirmation if the transfer succeeds. The account numbers should easily identify the corresponding bank servers.

Bank server

The back server should be written in Java with an embedded Apache Derby database. It should provide deposit and withdrawal operations in a Java RMI interface for clients. Concurrency for user requests should be managed with threads.

Transactional server

The transactional server should be written in Java an may use any persistence mechanism to store the log (e.g., an embedded database server in non-XA mode). It should provide operations for the client to initiate and terminate distributed transactions and interfaces for resources. The communication mechanism and the concurrency primitives chosen for the transactional server should be briefly justified in the report.