

Reliable Distributed Systems

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Client/Server Bank

Consider a server providing a basic bank account service with the following operations:

- The balance operation returns the current value in the account.
- The movement operation, with a positive parameter, deposits the amount in the account and returns true.
- The movement operation, with a negative parameter, withdraws the amount from the account if the resulting balance is not negative, returning true. It returns false otherwise.

Steps

1. Create the bank interface and its implementation.
2. Create a testing application that runs a very large number of random requests on the bank implementation and checks whether the final balance is the one expected.
3. Create a remote invocation mechanism for the bank interface using sockets.

Learning Outcomes Recall client/server programming with remote method invocation. Characterize the behavior of the replicated server in terms of consistency criteria.