Distributed Systems
Exercise Sheet 3, Tuesday, 14:15
Klingemann, SS 2023

Preliminary Java-Exercise (assessment only in combination with subsequent tasks)

Realize a simple account-management-system of a bank. Implement two classes for this purpose: One class for accounts and one class for accounting entries. Each account has two private attributes: a name and a set of accounting entry objects. This set should represent the accounting entries that belong to the account. (Note that it is a set of objects and not just a number!) Each accounting entry has three private attributes: an amount, a date and the name of the other account involved in the transaction.

An account should have methods with the following functionality:

- Search for an accounting entry with a particular amount. You can assume that there exists at most one. The method returns the corresponding accounting entry object.
- Add a new accounting entry. The method has three parameters: an amount, a date and an account-name. A corresponding accounting entry object is created and added to the set of accounting entries.
- Return the set of all accounting entry objects of the account. (The return value has to be a collection of accounting entry objects and not just a number!)
- Return the name of the account.

An accounting entry should have methods with the following functionality:

- Return the amount
- Return the date
- Return the account-name
- Change the amount

Implement the two classes and a main-function to test them. You should in particular be able to calculate within your main-function based on the methods above the total amount of all accounting entries of an account.