**UTCN**

**Computer Science Department**

**Software Design 2015/2016**

**ASSIGNMENT A3**

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1. **Objective**

Enhance the internet banking application from previous assignments.

1. **Application Description**

Keeping the same functionality as before, refactor the application in such a way that actions which involve money (e.g. transfers, get account balance) come from a separate module of the application (let’s call it Accounts module). This should follow the Client-Server model, where the Server represents the module responsible for retrieving the balance and executing transfers, and the Client is the rest of the application.

Bank operators should now be able to add contracts tied to an account (credit or deposit). The contracts need to specify the monthly interest for that account (for testing purposes you can choose a daily interest instead of monthly).

Credit accounts need to have another field called *chargeback* added to them. This field represents the amount of money needed to be payed back by the client (= money taken from the account + interest). Deposit accounts need to display appropriate information when being queried (the money inside the account = money deposited + interest).

All the logic carried for computing the interest for an account need to be inside a module (let’s call it Interest module). This can reside inside the Accounts module or can live on its own.

1. **Application Constraints**

Continue the application started for Assignment 1.

Use at least one of the following patterns: Observer, Commander.

For the Client-Server part, the Client should be notified by the Server when the action was completed (you can use sockets, REST calls, SOAP calls, queues, store values in a table that is periodically queried).

1. **Requirements**

* Create the analysis and design document (see the template).
* Implement and test the application.
* Bonus points for unit testing (relevant pieces of the application)

1. **Deliverables**

* Analysis and design document.
* Implementation source files.