
Laboratory 4**Attendance/Demo**

To receive credit for this lab, you must make reasonable progress towards completing the exercises and submit individually the final result of your work on cuLearn. When you have finished the exercise, call your instructor or a TA, who will review your solution. For those who don't finish early, the TA will ask you to show whatever you have completed, starting at about 15 minutes before the end of the lab period. Finish any exercises that you don't complete on your own time.

Instructions

To better benefit from the work being asked, it is recommended to work in groups of two or three (not more). Your answer document should contain the names of all the group members.

Problem definition

Recall the ATM problem description you worked on during the last lab. You may download the text from last lab again. A solution to that lab is provided below under the form of a use case diagram, a textual description of each actor and a textual description of each use case in the use case diagram.

What to do

You are asked to continue the requirement elicitation activity you started during the previous lab. This time, your task is to describe each use case with the use case description template discussed in class. Since you are working in groups, it is recommended that you split the task among the group members. Along the way of fully describing use cases, you may feel that the list of actors has to be revisited (updated), that the list of use cases has to be revisited (updated), that the use case diagram needs to be updated (or any of these together). Feel free to update your requirement elicitation document.

Your answer should include:

1. a use case diagram (possibly updated)
2. the list of actor descriptions (possibly updated)
3. the list of use cases (fully specified according to the template discussed in class).

For the list of use cases, you are asked to focus your attention on the following use cases first: Withdraw, CheckBalance, CancelTransaction, EjectCard, TakePicture.

If you have some time left, then focus your attention on the following use cases: Query, Transfer, Deposit.

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the following transactions: withdraw, deposit, transfer, and query. Once the customer completes his transactions, the card is ejected.

Deposit box: Accepts the envelope during each deposit transaction and prints amount of funds and the account where the funds needs to go on the envelope.

Receipt printer: This is a part of ATM. It prints the receipt after each transaction (deposit, withdraw,...).

List of use cases (in alphabetical order)

Cancel transaction: A customer may cancel a transaction at any time (though not after a withdrawal transaction has been approved, or after inserting an envelope); the transaction is terminated and the card is ejected.

Check Balance: The ATM asks the Bank whether the account from where some funds have to be moved has a sufficient balance.

Collect Envelope: The ATM operator retrieves the deposit envelope.

Deposit: Request the customer to select an account and an amount to deposit. The system waits for the customer to place the deposit envelope into the ATM. A receipt is printed, mentioning the details of the deposit and the ATM also prints that information on the inserted envelope (the device accepting envelopes has a printer). After that the card is ejected (includes eject card). The customer can cancel the deposit transaction (extends cancel transaction).

Eject card: The card is ejected at the end of each transaction.

CardInserted: A transaction is initiated when a customer inserts an ATM card into the card reader. Encoded in the chip on the card is the card number, the start date, and the expiration date.

Insert PIN: After the card is inserted the system validates the ATM card to determine that the expiration date has not passed, that the inserted PIN (personal identification number) matches the PIN maintained by the system, and that the card is not lost or stolen.

PIN Invalid: The customer is allowed three attempts to enter the correct PIN; the card is confiscated if the third attempt fails.

Stolen/Lost Card: Cards that have been reported lost or stolen are confiscated.

Query: Requests the customer to select an account. For approved query a receipt is printed and the card is ejected (includes eject card). The customer can cancel the query transaction (extends cancel transaction).

Refresh ATM: An ATM operator may start and close down the ATM to replenish the ATM cash dispenser, and for routine maintenance.

Take picture: The ATM takes a picture of the customer using the ATM, adds a date, time, and location stamp, and uploads it to the Central Server.

Transfer: Request the customer to select two accounts (one to transfer to and one to transfer from) and an amount to transfer between them. It then verifies that one of the accounts (the one to be debited) has sufficient funds. For approved transfer a receipt is printed and the card is ejected (includes eject card). The customer can cancel the transfer transaction (extends cancel transaction).

Withdraw: Request the customer to select an account and an amount to withdraw. Checks the selected account has sufficient funds to withdraw the requested amount as well as if the ATM system has sufficient cash in its cash dispenser to handle the request. If so, the ATM system dispenses the cash and ejects the card (See: Eject card). The customer can cancel the withdrawal (extends cancel transaction).