ABC Bank Corp.

ATM Project Handout 3-2

Use Case Report: Deposit Funds

Version 1.0

Introduction

This is an example of what a use case report might look like. There is much more detail in the use-case report than there was in the step-by-step outline that was the first draft of the use case.

In this example, we show the report as it might appear in the middle of developing it. There are still mistakes in the report, which we point out in our comments.

There are many styles of writing use cases. We show one style here, based on the template and guidelines for a use-case report in the Rational Unified Process.

Revision History

Date	Version	Description	Author
15/03/2000	3.1a	Revised format for RUP 2000	J. Bell

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Use Case Report: Deposit Funds

1. Use Case Name: Deposit Funds

1.1 Brief Description

This use case describes how a Bank Customer uses an ATM to deposit money into his/her bank account. The Bank Customer puts the money in an envelope and inserts the envelope into the ATM. All envelopes are stored in a special safety box in the ATM for later verification by the Cashier.

2. Flow of Events

2.1 Basic Flow

1. **Insert Card**
   This use case begins when the Bank Customer inserts a Bank Card in the card reader on the ATM machine. The ATM validates the card.
2. **Enter PIN**
   The ATM asks for the customer PIN code. The Bank Customer enters the PIN code.
3. **Select 'Deposit Funds'**
   The ATM displays the different alternatives that are available on this unit. The Bank Customer selects "Deposit Funds".
4. **Enter Account and Amount**
   The ATM asks for account to deposit into and amount to deposit. The Bank Customer enters account and amount.
5. **Deposit Money**
   The ATM asks the Bank Customer to put all bills in an envelope and insert it in the safety 'insert box'. The Bank Customer puts bills or a check in an envelope and inserts it in the deposit input. When the envelope is stored in the safety box the ATM prints the transaction id on the envelope.
6. **Credit Bank Account**
   The ATM sends the card id, PIN, amount and account to the Bank Consortium. The Bank Consortium replies that the deposit is accepted. The ATM system notifies the Cashier that there is an accepted deposit in the ATM safety box.
7. **Receive Card and Receipt**
   The ATM system returns the Bank Card to the Bank Customer and prints a receipt. The use case ends.

2.2 Alternative Flows

2.2.1 Not a valid card

In Step 1, Insert Bank Card, of the basic flow, if the card is not valid it is ejected to the Bank Customer with a "sorry not a valid card" message. The use case ends.

2.2.2 Wrong PIN

In Step 6, Credit Bank Account, of the basic flow, the Bank Consortium indicates that the PIN is wrong. The ATM displays the message "wrong PIN" to the Bank Customer. The Bank Customer has three tries to get it right. If the Bank Customer correctly enters the PIN, the basic flow resumes at Step 4. Otherwise the card is kept by the machine and the use case terminates.

2.2.3 Card stuck in card reader while reading card

In Step 1, Insert Bank Card, when the magnetic strip is read, the card gets stuck. An alarm is then sent to

the maintenance crew and the Bank Consortium. The local video camera starts recording. The ATM displays a warning message to the Bank Customer. The use case ends.

2.2.4 Cash is inserted without an envelope

In Step 5, Deposit Money, of the basic flow, if the Bank Customer inserts bills without an envelope, the top bill will be marked with the transaction number the and other bills not.

This is not good. Will we develop some HW that puts each deposit in some kind of wrapping?

2.2.5 Two or more envelopes are inserted

In Step 5, Deposit Money, of the basic flow, two envelopes are inserted. If the Bank Customer inserts several envelopes the ATM can't detect it. One envelope will be marked and the others not.

2.2.6 No envelope is inserted

In Step 5, Deposit Money, of the basic flow, no envelope is inserted. The time out is 1 minute; if there is no envelope after that time then a warning signal will sound, and a new message requiring an envelope displayed. If there still is no envelope, the transaction is terminated.

Will we eject the Bank Card? The Bank Customer has probably left - there is no Bank Customer at the ATM why eject the card?

2.2.7 No account

In Step 6, Credit Bank Account, of the basic flow, the Bank Consortium indicates the card is valid but there is no account connected to the card.

What to do? Should we eject the card or keep it? Is it an error in the Bank Consortium? Or is it a forgery? Or a old card that was connected but the account has expired?

[*This is a typical way to use Use Cases. You may write your questions right down in the text - and when you get your answers you have to correct it. Or you may assume one way - either the reviewers like it or they tell you how it should be*]

2.2.8 Invalid account

In Step 6, Credit Bank Account, of the basic flow, the Bank Consortium indicates the card is valid but the Bank Customer specified an account that does not exist. The result will be an error message "Sorry wrong account" and the Bank Customer has to restart in Step 4 of the basic flow.

2.2.9 No contact with Bank Consortium

In Step 6, Credit Bank Account, of the basic flow, if the ATM cannot contact the Bank Consortium then the ATM displays a message to the Bank Customer that the connection to the Bank Consortium was lost and 'Try again later', the Bank Card and cash envelope are returned, and the use case ends.

2.2.10 No contact with Cashier

In Step 6, Credit Bank Account, of the basic flow, if the ATM cannot contact the Cashier then the ATM displays a message to the Bank Customer that the connection to the Cashier was lost and 'Try again later', the Bank Card and cash envelope are returned, and the use case ends.

2.2.11 Card stuck in card reader while ejecting

In Step 7, Receive Card and Receipt, of the basic flow, or in the Quit Alternative Flow, the card gets stuck. The ATM may just try to eject the Bank Card for 2 minutes. If it still can't eject the Bank Card, then it has to be kept by the ATM. An alarm is then sent to the maintenance crew and the Bank Consortium. The local video camera starts recording. The ATM displays a warning message to the Bank Customer. The use case ends.

Whoops – on the Use-Case Diagram did we show that the Maintenance Crew is an actor for this use case? Also, is it technologically possible for the ATM to send a message the maintenance crew? We should check on this.

2.2.12 Card never removed from card reader

In Step 7, Receive Card and Receipt, of the basic flow, if the card is still there after 30 seconds an attention sound shall be turned on.

If the card is still there after 55 seconds it is retracted and placed in the wastebasket. This has to be written to the log. Then the attention sound is turned off. The use case ends.

2.2.13 Log full

After Step 7, Receive Card and Receipt, of the basic flow, if the log can't register one more transaction, then the ATM shall be closed down and a warning will be sent to the Maintenance crew.

2.2.14 Breakin

If, at any time during the use case, any of the ATM's shell protection sensors are activated, then the video camera begins recording, and an alarm is sent to the Police. All current data is written to the log record. This log record is also sent to the Bank Consortium. The card is kept by the ATM. The current transaction is terminated. The use case terminates.

2.2.15 Quit

The Bank Customer can anytime during the use case decide to quit. The transaction is stopped. If the ATM has already transmitted its request to the Bank Consortium, then the ATM sends a new message to the Bank Consortium to abort this transaction. The ATM records the aborted transaction in its log.

The Bank Card is ejected. If an envelop has been inserted, it is returned. The use case terminates.

2.2.16 No reply from User

If, at any time during the use case, the system asks for input from the Bank Customer and (s)he doesn't reply within 30 seconds - then a warning sound will beep.

If there still is no reply for 25 more seconds, then this operation will be closed down and the ATM will put the card in the wastebasket. This will be registered on the log. The use case ends.

2.2.17 Power off

If, at any time during the use case, the power goes down, then all activities are frozen and the card is mechanically ejected. The ATM issues a warning message that the Bank Customer must visit the bank to finish the deposit. The use case ends.

3. Special Requirements

3.1 Time to process card

The ATM shall respond within .5 seconds after the Bank Customer inserts the card in the Card Reader.

3.2 Standard Card Format

The ATM shall recognize all Bank Cards that have magnetic strips encoded in Bank Association Standard format.

4. Pre-Conditions

4.1 Bank Customer has a card

The Bank Customer must have a bank card in order to begin this use case.

4.2 ATM has connection to Bank Consortium

The ATM must have a connection to the Bank Consortium in order to begin this use case.

5. Post-Conditions

5.1 Card return

At the end of this use case, either the Bank Customer will have their bank card returned or the bank card will be kept and the Bank Customer will be notified of where it will be sent.

5.2 Accounts balanced

At the end of the use case, all account and transaction logs are balanced, and communication with the banking system is reinitialized.

6. Extension Points

None specified for this use case.

7. Relationships

The Actor starting this Use Case is:

Bank Customer

Actor(s) also involved in this Use Case:

Bank Consortium

Cashier

Maintenance crew

Police alarm central

8. Use Case Diagrams

None specified for this use case.

9. Other Diagrams

None specified for this use case.

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