SFWR ENG 3KO4

Software Development

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Software Requirement Specification (SRS)
for the Automated Banking Machine

(ABM system)

REVISED *ABM System Overview*

- The software to be designed will control a simulated automated banking machine (ABM) having a magnetic stripe reader for reading an ABM card, a customer console (keyboard and display) for interaction with the customer, a slot for depositing envelopes, a dispenser for cash, a printer for printing customer receipts, and a key-operated switch to allow an operator to restock money in the machine. The ABM will communicate with the bank's computer over an appropriate communication link. (The software for the hardware and communication interface is not part of the requirements for this problem.)

- The stakeholders are the **customers**, the **bank**, and the **system operator**.

Customer Related Requirements

- The ABM will serve one customer at a time.

- A customer will be required to insert an ABM card and enter a personal identification number (PIN) - both of which will be sent to the bank for validation at the beginning of a session.

- Once validated the customer shall be able to perform cash withdrawal from any suitable account linked to the card, in multiples of $20.00.

Customer Related Requirements *Cont'd...*

– A customer shall be able to make a deposit to any account linked to the card, consisting of cash and/or checks in an envelope. The customer will enter the amount of the deposit into the ABM, subject to manual verification when the envelope is removed from the machine by an operator and verified.

– A customer shall be able to transfer money between accounts linked to the card.

– A customer shall be able to inquire about the balance of any account linked to the card which will be printed as an order statement.

– A customer must be able to abort a transaction in progress by pressing the Cancel key in the keyboard.

Operator Related Requirements

- The ABM will have a key-operated switch that will allow an operator to start and stop the servicing of customers.

- After turning the switch to the "operator mode" position, the operator will be required to verify and enter the total cash in stock.

- When the switch is moved to the "operator mode" position, the machine will stop serving customers after completing the current customer, so that the operator may remove deposited envelopes and reload the machine with cash, blank receipts, etc.

Bank Related Information

- MacBank has a central database where for each customer the following fields exist:

- **Card number**: 8 numeric-digits.

- **Pin number**: 4 numeric-digits.

- **List of accounts linked to the card**:

  – Account number: 12 numeric-digits.

  – Account identifier: Chequing: 0, Savings: 1, Credit Card: 2.

  – Account Balance: Regular Balance plus any amounts that are still on hold.

Bank Related Information *cont'd…*

- Any withdrawal or transfer, from any given account, shall not exceed the balance available on that specific account. MacBank **does not allow** overdrafts.

- All clients have a maximum of $500 withdrawal limit for any single transaction.

- Any amount deposited in cash or cheques will be on hold until verified by the bank staff

ABM Specifications

- Every interaction with the ABM will start with the customer sliding his/her card on the magnetic stripe reader.

- The ABM will communicate each transaction to the bank and obtain verification that it was allowed by the bank.

- A transaction will be considered complete by the bank once it has been approved. The bank will return an error-code showing if the transaction was successful, or the reason for incomplete transaction.

ABM Specifications *cont'd...*

- The ABM will provide the customer with a printed receipt for each successful transaction, showing the date, time, type of transaction, account(s), amount, and ending and available balance(s) of the affected account ("to" account for transfers).

- Minimum money in the ABM is $10,000 before it flags the operator

- The ABM can be stocked with only $20 dollar bills. When restocking the machine, the operator has to indicate how many $20 bills have been stocked.

- No history of transactions are displayed or printed (only the balance of the current account)