**How to make transactions through an ATM**

The problem is how to make transactions through the ATM. ATM (Automated Teller Machine) is an electronic banking outlet. It is a service provides to customers from a particular bank that allows doing basic transactions with a limit.

There are few transaction services provide by a modern ATM.

* Account Balance Checking
* Cash Withdrawals
* Cash Deposits
* Check Deposits

This is a model of an actual ATM. When a customer obtaining service from an ATM first needs to choose the preferred language.

Then ask the customer to choose the preferred transaction type either the Card option or Card-less option. If the customer chose the Card option then ask the customer to insert the ATM card. Then the system will check the validity of the card. If it is expired the system will display an error message and eject the card. If it is valid then the customer will be requested to enter the pin. Then the system will check whether the PIN is correct or not.

If the pin is incorrect customer will be given 3 attempts to enter the PIN. If the customer entered an incorrect PIN within all 3 attempts system will eject the card. If the given PIN is correct customer will have to choose the account type whether it is a Current Account or a Savings account. If the account type is incorrect, the customer will be redirected to the previous menu. If the account type is correct, Display the account details and ask the customer that these details whether correct or not. If the customer chooses incorrect redirect to the previous menu. If the customer chooses 'correct' the customer will be given transaction options to choose from.

If the customer chooses the account balance checking option, the system will display the available balance.

If the customer chooses the cash deposit option the cash tray will be opened. Then customer will be instructed to put the money on the tray. Then the machine will enter the money. Then the system will check the amount and display the amount. Then customer will be asked whether the entered amount is correct or not. If the customer clicks incorrect machine will eject the money. If the customer clicks correct account balance will be updated. Then customer will be asked whether a receipt needs to print or not. If the customer clicks Yes a receipt will be printed. If the customer clicks No display the message “Transaction successful”. Then the system will be redirected to the welcome screen.

If the customer selects the Cardless option customer must enter the account number and ID number. Then the system will be displayed the name of the account holder. Then customers have to choose these details are correct or not. If the customer selects “No” the system will be redirected to the previous menu. If the customer chooses “Yes” the Cash deposit tray will be opened. Then the same above process will happen.

1.

* Bank has real-time update database.
* ATM machine always has enough cash to do transactions.
* ATM has always connected to the servers and database.
* No network problems happen during the transactions.
* Customer has a bank account and ATM card.
* Customer doesn’t insert torn, distorted paper-money or illegal money or foreign currency to the cash deposit tray.

2.

**Main modules**

* Cash withdrawing module
* Balance checking module
* Cash depositing module

**Sub modules**

* Card inserting module
* Card validity checking module
* Language selecting module
* Account number and pin checking module
* Account type selecting module
* Transaction type selecting module- Card-less or card option
* Card ejecting module
* Receipt printing module

3.

* Ask customer to select the language.
* Ask customer to insert ATM card.
* Check the card’s validity.
* If it is expired display the problem and eject the card.
* If it is valid ask to enter the pin.
* Check that the pin is correct.
* If it is incorrect give 3 attempts to type the pin.
* If all 3 attempts are incorrect display the problem and eject the card.
* If the pin is correct ask from the customer to select account type.
* Then display the account details and ask customer to enter the amount.
* Check that the account balance is sufficient for the withdrawing amount.
* If it is insufficient display the problem and ask to select exit or enter the amount again.
* If the balance is sufficient withdraw cash.
* Update the account balance.
* Ask from the customer whether he/she wants a receipt for the transaction.
* If customer select no end the transaction.
* If customer select yes print a receipt and end the transaction.
* Return to the welcome screen.

4.

* Real ATM machine process is much more complicated than this process.
* This machine has not a capability to check the paper money whether it is torn, distorted, legal or not.
* There is no way to identify other issues related to the accounts and ATM cards.

Therefore, this system is just a model.

5.

ATM

Cash deposit

Check balance

Cash Withdrawing

Update Account Balance

Select transaction type

Eject card and return to welcome screen

Select the account type

Enter PIN number

Insert card

Select the language

Current Account

Savings Account

6.

* All components have step by step instructions.
* They have some of same inputs for each model.

*Eg: PIN number*

* They have conditions and loops.

7.

* If customer select language as English then use English,

If customer select language as Sinhala then use Sinhala,

Else use Tamil as the language.

* If the ATM card not expired ask customer to enter pin number,

Else eject the card and display an error message.

* If the pin is correct, then ask customer to select account type,

Else ask customer to enter it again.

* If the selected account type is correct then display the account details and available balance,

else redirect to the previous menu.

* If customer select transaction type as cash withdrawal, then ask to enter the amount,

Else ask customer to put cash on the cash deposit tray.

* If entered amount is sufficient for withdrawal then withdraw cash,

Else display “insufficient balance” and redirect to the previous menu.

* If customer need a receipt, then print a receipt,

Else don’t print a receipt.

8.

* Insert card and select language
* Verify PIN number
* Select the account type
* Select the transaction type
* Update account balance
* Print receipt

9.

* Unexpected power supply failures.
* Unexpected network failures.
* Insert torn, distorted or illegal paper-money to the deposit tray.
* Withdrawal amount exceeding the maximum amount of withdrawing per day.
* Withdrawal amount exceeding the account balance.
* Insert expired ATM cards.
* Customers use restricted bank accounts.