Aadhaar Based Multi-Bank Debit Transactions with One Smart Card

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Abstract – *Generally Customer will perform ATM transaction by using the respective Bank ATM Debit Card. It is difficult for Customer to carry multiple Debit cards and to remember the Pin Numbers. I am suggesting a solution that already every Bank Account is linked with Aadhaar so, Making an Aadhaar into Smart Aadhaar card by adding chip which will used to perform the ATM transactions. Here instead of carrying multiple cards and remembering of their pin numbers, Customer can carry one Aadhaar Digital card and can remember one pin number to perform any Bank ATM transactions.*

Key Words: One Card Multi-Bank Transactions, Multibank ATM, Smart ATM, Aadhaar ID based, Biometric Based, Secured ATM Transactions.

1.INTRODUCTION

The automated teller machine (ATM) is an automatic banking machine (ABM) that allows the customer to complete basic transactions without any help from bank representatives. There are two types of automated teller machines (ATMs). The basic one allows the customer to only draw cash and receive a report of the account balance. Another one is a more complex machine that accepts the deposit, provides credit card payment facilities and reports account information.

It is an electronic device that is used by only bank customers to process account transactions. The users access their accounts through a special type of plastic card that is encoded with user information on a magnetic strip. The strip contains an identification code that is transmitted to the bank's central computer by modem. The users insert the card into ATMs to access the account and process their account transactions. The automated teller machine was invented by john Shepherd-Barron in the year of 1960.

So, with ATM lot of benefits are having for the customer and also having many security problems. As technology place a very important role in this Application, I have to provide better solution to overcome the problem. In the existing papers few are suggested the only Artificial Intelligence or Aadhaar based solutions. To provide high security in this paper I am grouping the two techniques of AI and Aadhaar.

As the customer Account linked with Aadhaar ID the same data is going to furnish in the ATM card and as well the Customer Facial image with AI. When a Customer insert an ATM card first Account data will be fetched along with that it also fetches facial image and finger print based on AI and Aadhaar ID. Customer will be authorized by reading the current facial image with Cam and Fingerprint by device and will go for validation. After successful validation only Customer can perform the transaction. So, this will be leads to high level security in ATM transactions

2. LITERATURE SURVEY

2.1 One SMART card

As the Customer Bank Accounts is linked with Aadhaar, instead of having multiple Bank ATM Debit cards if Government provides One SMART Debit card which was linked with Aadhaar. Then Customer will perform any Bank ATM Debit card transactions with One SMART Debit card. So, it reduces cost, ambiguity and difficulty in carrying.

2.2 Aadhaar based Security

In ATM Debit card transaction customer is getting validated by entering PIN, here other than the authorized customer who knows the PIN also can perform the transaction. So, Security is somewhat getting lack. If SMART Debit card is linked with Aadhaar then the Customer should have to get validate by his Finger print which was stored in the UIDAI. So, it was more secured when we compare with the existing one.

3. EXISTING METHOD

When ATM Debit card is inserted into card slot the information present on the magnetic strip is read by two card readers present in the card slot. One card reader looks for special code which confirms that card is real. Second card reader grabs account number and password to check against what you entered. If authentication is successful then ATM connects with bank server through telephone network. Now user can perform bank transactions and when transaction is completed card comes out through ATM slot and user automatically logs out. Counting machine is present to count number of notes

and receipt comes through printer which gives you information about transaction completed.

User needs to perform one of the following transactions:

1. Cash transfer
2. Cash Withdraw
3. Balance Enquiry
4. Password change
5. Cash Deposit

To perform any of above ATM Debit card transaction Customer needs separate card and pin number for the respective Bank. It is being difficult for customer who have multiple Accounts in multiple Banks to carry multiple cards and to remember multiple pins.

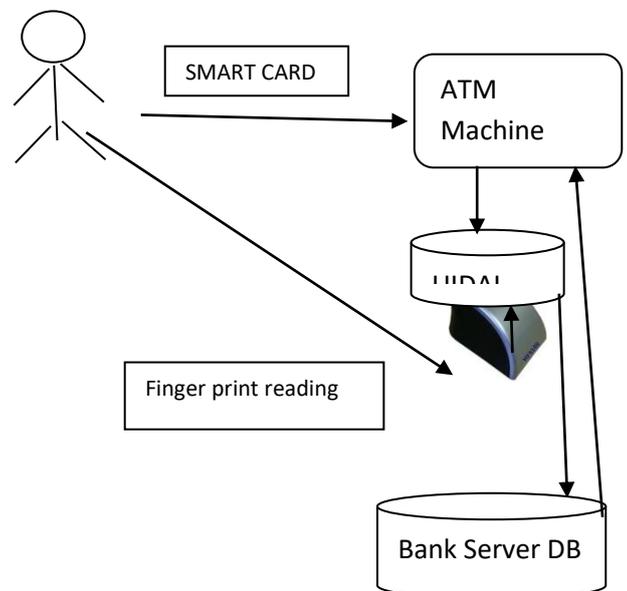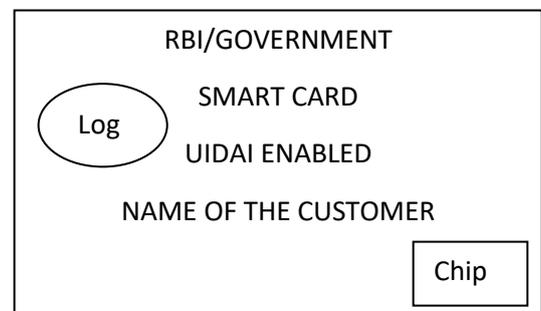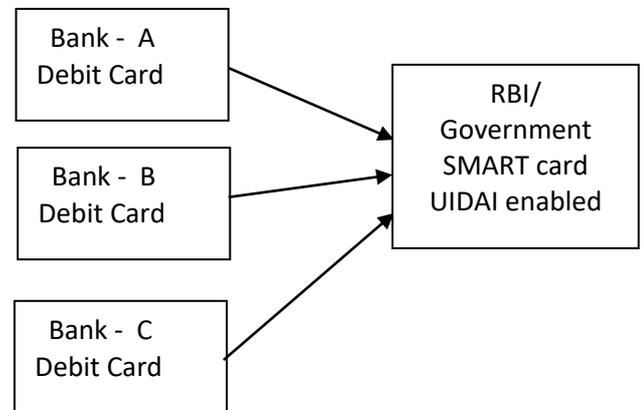This is just general method of what happens.

4. PROBLEM STATEMENT

1. Ambiguity: Having multiple ATM cards has to remember multiple PINs so, it is ambiguity for customer which PIN for which card.
2. Cost and Carry: To issue separate card from each bank the cost will be more, it is difficult for customer to carry multiple cards.
3. Security: Now the transactions is being performed by the customer only with PIN verification, it is known to others can be hacked the account.

5. PROPOSED METHOD

In proposed method what I want to suggest is Government/RBI have to design one SMART card which should linked with Aadhaar and it should make mandatory that all Bank Accounts should linked with Aadhaar. SMART card also should have chip that should consists of Aadhaar ID. When Customer insert SMART card into the ATM, machine should scan Aadhaar ID and has send a request to UIDAI server to retrieve the Biometric images into cache for validation. If it reads data then it should send a signal to machine to scan the Customer Fingerprints. After reading Customer fingerprints it should send to the UIDAI server cache for validating the customer and to retrieve the linked Bank Accounts of a Customer. It should display the Bank Accounts which was linked to Aadhaar card on display. Customer has to select of any one of the Bank Account to perform the Debit card transaction. Once completion of choosing of Bank Account next will connection will be establish with the respective Bank server. After establishing connection, it will continue to perform the ATM transaction based on the existing scenario.

Here, I am proposing solution to reduce expenditure to design multiple bank debit cards and ambiguity for the customer to remember multiple PINs and burden of carrying multiple ATM debit cards.

Requirements to Implement AIASA

To implement the proposed system there is need of few Hardware and Software requirements.

1. Biometric Device
2. SMART card

3. Module to link the UIDAI for retrieval of stored finger images.
4. Module to Read linked Bank Accounts data based on Aadhaar ID.

Some algorithms and Methods to implement Aadhaar validation.

- Local Binary Patterns Histograms (LBPH)
- Scale Invariant Feature Transformation (SIFT)
- Speed Up Robust Features (SURF)

Machine Learning Algorithms

- Neural Networks
- Support Vector Machines
- Nearest Neighbor
- Decision Trees

By using of the above Algorithms will perform Biometric finger validation.

6. FUTURE SCOPE

- In future we should try on Card-less ATM transactions.
- Here Proposed system is applicable for only ATM based transactions. It is identifying the Customer Physically authorized or not.
- If the Customer want to perform the same Transaction through Online either with mobile app or internet banking there the Customer is identifying only with Password or PIN number to perform transaction. Therefore, Cybercrimes are growing rapidly.
- In future we will try to apply this functionality on Credit card transactions.

7. CONCLUSION

It is very difficult for Customer to carry multiple ATM Debit cards and also ambiguity to remember multiple PINs. This proposed system will reduce the expenditure to design multiple cards, carrying of multiple cards and also ambiguity in remembering of multiple PINs. In terms of Security, it is validating the Customer based on Aadhaar database Fingerprint data. So, it will provide good security and also easy for Customer to perform multiple ATM transaction on multiple bank accounts.

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