Wireless Data Synchronization for Secured Money Transaction Using Multi Account Embedded ATM Card

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Abstract- Automated Teller Machine (ATM) services are more popular because of their flexibility and easiness for banking systems. People are widely using their ATM cards for immediate money transfer, cash withdrawal, shopping etc. To provide high security we introduced fingerprint-based customer authentication. The main objective of this project is to develop a single smart card ATM (Automated Teller Machine) for multiple bank accounts. It reduces the cost of inter banking transactions as interfacing different bank databases is a resource consuming thing.

In this security system the non-authorized persons can enter by using this smart card (RFID) and GSM Module based OTP (One Time Password) and keypads. User module is the interactive module through which the user can log into the system and perform the transactions of the user's choice. Though the proposed system provides the user a level higher convenience, efficient and user friendly.

I. INTRODUCTION

ATM is an abbreviation of Automated Teller Machine. It is introduced in the year 1959 for encouraging self-service in retail banking. This makes people to deposit, withdraw and transfer amount without the help of banking personnels and it can be done at anytime and anywhere. At first, the ATM was made to tansact for the particular bank customers but later on the ATMs are connected to interbank network, so that it enables people to deposit, withdraw and transfer amount from the ATM machines not belonging to that particular bank (i.e.) any one can access any banks ATM machine to carry out their transactions. ATMs rely on authorisation of a financial transaction by the card issuer or other authorizing institution via the communication network. This is often performed through an ISO 8583messaging system. Many bank charges ATM usage fees from the customers for the transactions. At present every customer has an individual ATM card for each and every bank in which he/she maintains account. So, handling the cards, their passwords play a major role here. So, to overcome these difficulties we embedded more than one bank account of the user in a single ATM smart card, so that the user can swipe the card and can select the bank from which he/she are interested to carry out transaction.

II. HISTORY OF ATM

ATM in the USA, however he was not first inventor to create an ATM. In 1939, Luther George Simjian started patenting an earlier and not-so-successful version of an ATM.

An automatic teller machine or ATM allows a bank customer to conduct their banking transactions from almost every other ATM machine in the world. Don Wetzel was the co-patentee and chief conceptualist of the automated teller machine, an idea he said he thought of while waiting in line at a Dallas bank.

At the time (1968) Wetzel was the Vice President of Product Planning at Docutel, the company that developed automated baggage-handling equipment. The other two inventors listed on the patent were Tom Barnes, the chief mechanical engineer and George Chastain, the electrical engineer. It took five million dollars to develop the ATM. The concept of the modern ATM first began in 1968, a working prototype came about in 1969 and Docutel was issued a patent in 1973.

The world's first ATM was installed in Enfield Town in the London Borough of Enfield, London on June 27 1967.

III. LITERATURE SURVEY

The ATM Machine The idea of self service in retail banking developed through independent and simultaneous efforts in Japan, Sweden, the United Kingdom and the United States. In the US patent record, Luther George Simjian has been credited with developing a "prior art device". Specifically, his 132 patent (US3079603) was first field on 30 June 1960. City Bank of New York installed a machine called a Bankograph in 1961. This wasn't an ATM as we know it, though: rather than dispensing cash, it acted as an automated way to deposit cash and checks but removed after six months due to the lack of customer acceptance. In simultaneous independent efforts, Engineers in Japan, Sweden and Britain developed their own cash machines during the early 1960s. The first of these was put into use was by Barclays Bank in Enfield Town in North London, United Kingdom, on 27 June 1967. This machine was the first in the world and was used by English comedy actor Reg Varney, at that time so as to ensure maximum publicity for the machines that were to become main stream in the UK.

The machine comprises of enclosures that are made of metal steel. The chest portion often houses currency, deposits and the mechanisms that handle these items. The chest portion also houses critical electric components that must be protected from tampering. It has an access door which is controlled by a suitable lock to prevent access to the interior by unauthorized personnel. The type of chest used varies with the type of ATM and the location where the machine is installed. Machines which operate in environment where they may be unattended for substantial period of time commonly have higher security chests and enclosures than machines which are installed in lobbies of buildings, stores or other places where guards or other people are usually present.

IV. SMART CARD & SECURITY BASICS

This Paper gives an overview of basics of smart card and its application and how it is used in various sectors. It also deals with security algorithm during encryption and decryption of data. This Paper tells us that why smartcard is preferred for banking system than other type cards.

A Smart card is type of chip card embedded with computer chip that stores and transacts data between users. It was introduced in Europe nearly three decades ago to pay phone bills. Smart cards greatly convenience and security of any transaction. They provide tamper proof storage of user and account identity. Smart cards systems have proven to be more reliable than other machine-readable cards.

The card is made from PVC, Polyester or Polycarbonate. The card layer is printed first and then laminated in a large press. The next step in construction is the blanking or die cutting. The card consists of several layers to prevent from card damage. Tools used for implementation are Fishbowl-To contain, isolate and monitor an unauthorized user and IDIOT (Intrusion Detection in Our Time)-A system that detects intrusions using pattern-matching.

V. SECURE INTERNET BANKING APPLICATION

This paper tells about how authentication can be kept safe during malicious software attacks. Here short-time passwords and one on certificate are used to protect the authentication.

There two types of common attack during internet banking authentication are,
1. Offline credential stealing attacks
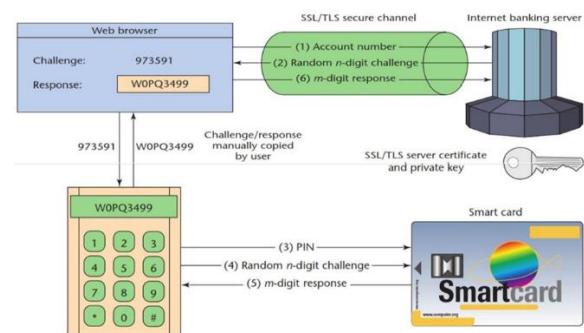2. Online channel-breaking attacks

Figure: Secure internet banking

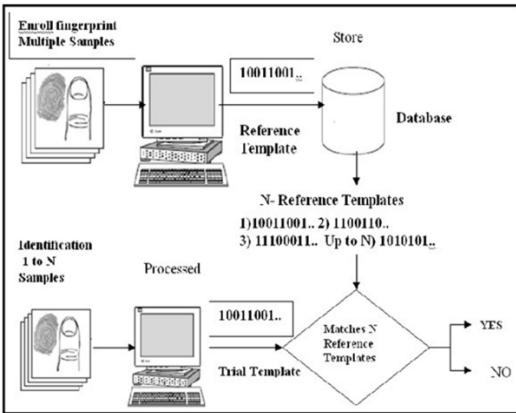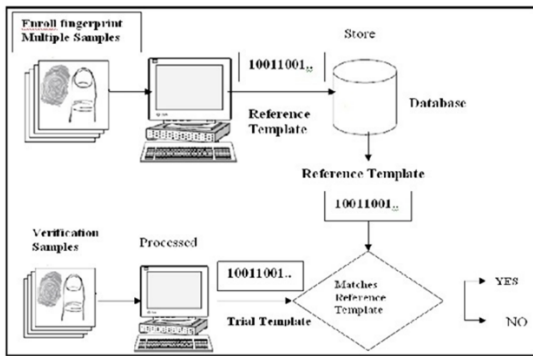## VI. PROPOSED SYSTEM

Fig. 3: Fingerprint Identification process

CONCLUSION

The system we are using for handling multiple accounts here is more efficient than existing system. This Reduces transaction cost of handling multiple accounts of a single user. This make banking system more efficient than the existing system. Using this the users can perform transactions for all his bank Accounts using single smart ATM card with Enhanced security system such as OTP (one-time password) and face recognition. Thus, the user can manage his multiple accounts in various banks with the help of this single smart card which provides access and reduces the complex of managing more than one ATM card and passwords. This also leads to reduce cost of transaction charges that were on the customers for making transaction and decrease in their production of smart cards for every account the user has. By implementing this ATM fraud i.e. skimming etc., can be avoided.

FUTURE SCOPE

- This project can be implemented for office security also.
- Also, to colleges, hospitals and also in parking system.
- Future research will help to do away with PINs completely and dwarf ATM card authorization by introducing palm and finger vein authentication which is fast, accurate and difficult to fake.

Since more than one bank accounts being added, the existing PIN security are not sufficient enough, so we can use a biometric scan in the smart card i.e. multi component card So that the user holds the card such that the face recognition on the biometric scan reader while he swipes the registered card and the image is authenticated at the real time. No one other than the user and their family can use the card. Only if the face matches the user can enter his PIN number otherwise the transaction will not be allowed until the user is authenticated.

REFERENCES

[1] "Smart Card & Security Basics" - CardLogix, paper no.:710030 www.cardlogix.com

[2] "Smart card-based Identity Card and Survey"- White Paper JKCSH (Jan Kremer Consulting Services).

[3] Chip-and-PIN: Success and challenges in reducing Fraud from Federal Reserve Bank of Atlanta"-Douglas King, Jan 2012.

[4] "Examining Smart-Card Security under the Threat of Power Analysis Attacks"- Thomas S.Messaerges member IEEE, Ezzat A.Dabbish member IEEE, and Robert H.Sloan senior member IEEE vol.51, No. 5, MAY 2002.

[5] "Secure Internet Banking Application"-Alain Hiltgen, Thorsten Kramp.

[6] Fingerprint Verification Using Smart Cards for Access Contol Systems, Raul Sanchez-Reilllo, IEEE AESS Systems Magazine, September 2018

[7] "Benefits of Smart cards versus Magnetic Stripe Cards for Healthcare Application"-Smart card

Alliance 2011.

[8] Katakam Swathi, Prof.M.Sudhakar "Multi Account Embedded ATM Card with Enhanced Security" IOSR Journal of Electronics and Communication Engineering IOSR Journal of Electronics and Communication Engineering, Volume 10, Issue 3, Ver. I (May-Jun.2015)

[9] Tahaseen Taj I S, Dr Suresh M B"AN EMBEDDED APPROACH: FOR HANDLING MULTIPLE ACCOUNTS WITH SMART ATM CARD" International Conference on Computer Science, Electronics & Electrical Engineering-2015

[10] Nair Vinu Uthaman, Pratiksha Shetty, Rashmi, Mr.Balapradeep K N "MAASC Multiple Account Access using Single ATM Card" International Journal of Science, Engineering and Technology Research (IJSETR), Volume 3, Issue 6, June 2014

[11] Youjung Ko, Insuk Hong, Hyunsoon Shin, Yoonjoong Kim"Development of HMM- based Snoring Recognition System for Web Services" 2016 IEEE