REVIEW PAPER ON REAL TIME PASSWORD AUTHENTICATION SYSTEM FOR ATM

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Abstract—The main purpose of this system is to enhance the security level in the ATM (Automatic Teller Machine) transaction for user's. The existing ATM system are not enough secure, as those system rely on static PIN which is fixed and there are chances of security breaches, so the propose system will overcome these problem by designing in a simple way with TAC (Transaction Authentication Code) with RFID technology using LPC2148 as a series controller of ARM7, for unique identification of the user here low frequency RFID card is used. First user must register with his cell phone number at the time of registration. When the user's RFID card read then he has to enter PIN (Personal Identification Number) then TAC which is a 4 digit code and it is different for every transaction it will send to the user's cell phone with the help of GSM. The 4 digit TAC should be entered by the user, after that transaction will be done. The propose system will an added layer of security that enriches the existing ATM transaction system.

Keywords— TAC, LPC2148, GSM Modem, Keypad, LCD, RFID Card and Reader.

I. INTRODUCTION

Today as we all seen ATM has been used in our daily lives, as they are used for ease in transaction which was somewhat difficult in early times where there were long queues in bank for withdrawals and checking balance of account. ATM allows a customer to make cash withdrawals and check account balance without the need for human teller. The present ATM system uses Bank ATM card and PIN (Personal Identification Number) which user can change at any time through ATM machines. This password is static type i.e. once set access will be done after using this so the chances to hack it more, and if ATM card is lost and password is stolen then anyone can easily access that account by making financial losses of customer so there are chances of security threats in existing system like shoulder surfing, data skimming, card trapping. Various Shoulder surfing resistant PIN entry methods have been proposed for secure PIN entry [8] but they are not resistant to recording attack

Magnetic Stripe technology is most commonly used in existing ATM cards. In magnetic stripe, when the person inserts his card into the card reader, the skimmer captures the card information with the help of skimming devices which is placed upon the reader, so various chances of skimming attacks has been seen.

Several proposed work done with the help of Biometric authentication [10]. The main purpose to use biometrics is for uniquely identify an individual with the help of characteristics of the human body. Biometrics uses characteristics that can be physical such as finger prints [11], face, voice, and iris scan. As they are known to be very secure and are used in special organization, they are expensive hardware that is needed to identify and maintenance costs [11].

1.1 Radio Frequency Identification

RFID is advance contactless identification technology, with the help of radio waves. In RFID radio-frequency waves is used to transfer data between readers to identify, categorize and track. RFID card are small electronic devices. RFID system is composed of three main components tag, reader, and back end database [9].

RFID Tag: It is contactless tags may either be active or passive. Active tags contain power source which is an on-board, such as a battery, while passive tags must be inductively powered via an RF signal from the reader [7]. Consequently, active tags may be read from a greater distance than passive tags. Passive tags can only operate in the presence of a reader.

RFID Reader: It reads tag's data with the help RFID antennas at a certain frequency. The reader is electronic devices which transmits and receives a radio signals. The antennas has a reader which is attached, the reader translates the tag's radio signals through antenna. The antenna within a reader generates an electromagnetic field, when tag is present near this electromagnetic field the data or information stored on the chip in the tag is get transfer to reader [6].

RFID card comes in different ranges of forms and vary in radio frequency and storage capacity. Here low-frequency 125 KHZ RFID cards are used to identify a user, which is fast and does not require physical sight or contact between reader and the tagged item. It performs the operation using low cost components. It is used to provide unique identification that allows for wide range of applications [9]. To overcome the limitations of Magnetic stripes cards and biometric authentication technology RFID cards are used here as they don't require line of sight communication [5][6]. RFID cards can be read very quickly also they can be read in all types of environment.

Today single factor authentication such as the password is no longer considered secure in the banking because easy of guessing password. The propose system consist of passive RFID cards with the PIN and an added layer of a TAC. So this password authentication is used to meet the demand for providing better authentication option and security for users.

II.   RELATED WORK

To propose this concept I have studied related work and found following information

Ugochukwu Onwudebelu [1] express their though in proposed paper like that Securing financial transaction on ATM system with the help of Real time SMS (Short text message) based hashing system. After inserting ATM card and a PIN, user sends SMS based alert message to the bank and, then successful withdrawal of money will be done by hash key stored in database is equal to the mobile phone text message generated by customer's SMS and PIN. They uses three mandatory SMS message for a complete transaction process. But here two way communications is required to access the account using messaging service which is inconvenient.

Fadi Aloul, [2] proposed a system where mobile phone act as a software token for (One time password) OTP. They used two techniques, first method is Connectionless authentication in that user and server both are required to generate OTP, user having a mobile phone with OTP generation software, if both matches then authentication will done. Another method is SMS based authentication, where user will send a request to server for OTP, then server generate OTP and send to the user here two way communications is required for sending SMS, Complexity increases and requires more time.

Shimna M S [3] proposed a system where they used a dynamic password method for online banking in which the user has a mobile in that dynamic password scheme is implemented. They used secrete little function and a constant value. User needs to input the system random digits which the system provides and after that dynamic password is calculated for the

user. But inputting random digit is must here and also requires android mobile phone for this system which is not possible for all users.

Ankush Vishwanath [4] proposed a security system based on RFID and GSM. They used RFID tag to identity a person, OTP is send through GSM. Here OTP is entered with predefined code. They used RFID and GSM technology for secure access control, but here user must have to enter a combination of OTP and predefine code which leads to take more time.

K. Srinivasa Ravi [9] proposed RFID Based Security system for gate access security system which is to identify an authorized person and allow only them. Here they used low-frequency RFID cards for secure identification of the persons which allow only authorized person to get in. They used only RFID cards for security purpose.

III.   PROPOSE METHODOLOGY

This paper proposes an efficient and reliable system for the ATM user's with the help of password authentication including RFID cards for identification. The following figure 1 shows the various components of the propose system.
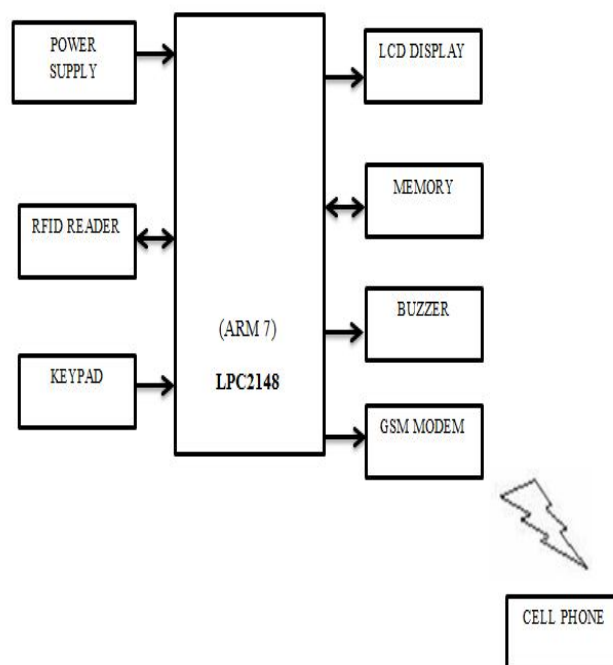

Fig 1 : Propose block diagram

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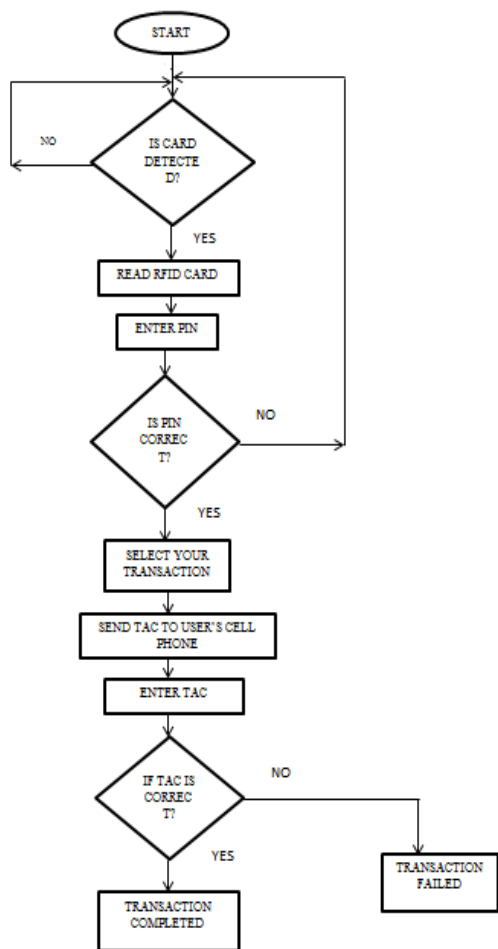
IV. FLOWCHART

Fig 2 : Propose Flow Chart

V. CONCLUSION

The propose system consist of RFID technology and password authentication using TAC. RFID is used to uniquely identify a user and TAC is used to add extra security which is a 4 digit code and that will be sent to user's cell phone number using GSM service, after entering TAC transaction will be done. So in this paper with the help of Password authentication and RFID identification the system will be simple, cost-effective and security level will get increase in an ATM transaction, as cell phone number is unique to every user.

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