

Cardless Multi-Banking ATM System Services using Face Recognition and OTP

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Abstract:

Currently systems are protected using many firewalls, IDS and security software. The existing system can be easily compromised by any tool used by an attacker. The aim of the system is to provide effective authentication from unauthorized users by providing three tier authentications which are login credentials, face Recognition scanner and OTP. The proposed methodology provides more control over data stored in the system by restricting the access to specific users for specific files with limited privileges and for a limited time period on the basis of secret key authentication using symmetric as well as asymmetric mechanisms. The integrity and confidentiality of data is fully guaranteed by not only encrypting the data using a secret key but also to the access permission and limited file information.

Keywords: Face, OTP, cardless ATM, Multibanking, Mobile phone

I. Introduction

An ATM is an electronic device which provides the user to perform transactions without the need of a cashier, bank teller. ATM services are popular because of their ease for banking systems. In modern ATMs, the customer account can be identified by inserting a plastic card with a magnetic strip that contains his or her account number. The customer then verifies his or her identity by entering a passcode (i.e.) personal identification number (PIN) of four digits. If the number is entered incorrectly several times consequently (usually the, most ATMs will retain the card as security precaution to prevent an authorized user from assuming the PIN by guesswork and so on. Moreover the customer has to pay transaction fees. Also customers use smart cards for the transaction which can be lost, duplicated, stolen or impersonated with accuracy. By keeping all burdens aside, the proposed system is about a simple and effective approach to withdraw cash without the involvement of a debit card which can be referred to as card less cash withdrawal. Face detection is used for authentication of users. An OTP is sent to the user, which along with face detection comprises two levels of security. When Face and OTP are matched then the customer's account will open and LCD display will display user name, debited money, authentication status etc. and the user can manage his/her multiple accounts in various banks and withdraw money from it. The basic aim of this research work is to design a card-less ATM. If that can be achieved and implemented, it could lead to the following objectives. 1. ATM fraud and criminal activities can be reduced or eliminated completely. 2. Enhance the use of ATMs by banking customers. 3. It will eliminate financial burden placed on customers for issuance and maintenance of ATM cards. 4. It will also reduce stress emanated from complaints related to ATM cards at the customers' care of bank staff, and customers that use ATMs.

II . Literature Survey

The idea behind embedded smart ATM cards proposed in [1] is that the customers can use a single ATM card to operate different bank accounts instead of having individual cards for each bank account.

In this the user swipes his/her smart card in the ATM machine, then it requests OTP on the server side. After selecting the bank the request is sent to the corresponding bank through a network and links it with the bank's server for accessing the database of the user so that the transaction is processed. In the EXISTING methodology, big data is an opportunity based environment. Big data analytics can lead to valuable knowledge for many organizations. RFID smart cards are used in [2] as ATM Cards for transactions. Users can create an account and get the ATM card from the bank. The user can integrate all his bank accounts which can be integrated in this single card with unique PIN numbers accordingly. User behaviour is monitored through HMM Model and he can set up a formula based authentication. The user can include all his family members' accounts details to this same card. The user can withdraw cash from their accounts after successful authentication of the corresponding PIN numbers.

The architectural design of the system proposed in [3] consists of three layers namely view layer, management layer and access layer. The view layer is visible to the users which consist of the GUI (Graphical User Interface) which is used in user interface and menu which is used by the user for selecting the options. The management layer is not visible to the user; it is used to generate the account details and also to notify the error messages. The access layer is visible to the user and it is the layer which provides the user options for transactions.

This universal ATM card that is designed in [4] can as well be used in petrol bunks for automatic filling of petrol for the desired amount. In such cases the card behaves as a prepaid card, so after swiping the card for the desired amount it automatically activates the pump. It consists of a buzzer section which indicates the activation of the pump. For such applications we select one of the banks as default so that the amount is automatically deducted from that account alone.

The study carried out in [5] is a venture into the e-banking system, especially ATMs for easy, quick and multiple accesses to user's accounts with enhanced security. Users can access multiple accounts using a single ATM card to conduct different banking transactions. The system is also more convenient for users because they need not carry several bank ATM cards around and try to memorize many PINs.

Mrs. Farha KouserIn and et al proposed a multi account bank affinity card system; the autonomous actions are attained by employing Arduino in their paper [6]. The Arduino is the central core part in this system. The Arduino has multiple features which enable all the security concerned applications for the ATM card issues. The RFID reader, fingerprint sensor, GSM module and keypad are the key modules interfaced with the Arduino.

III. System Architecture

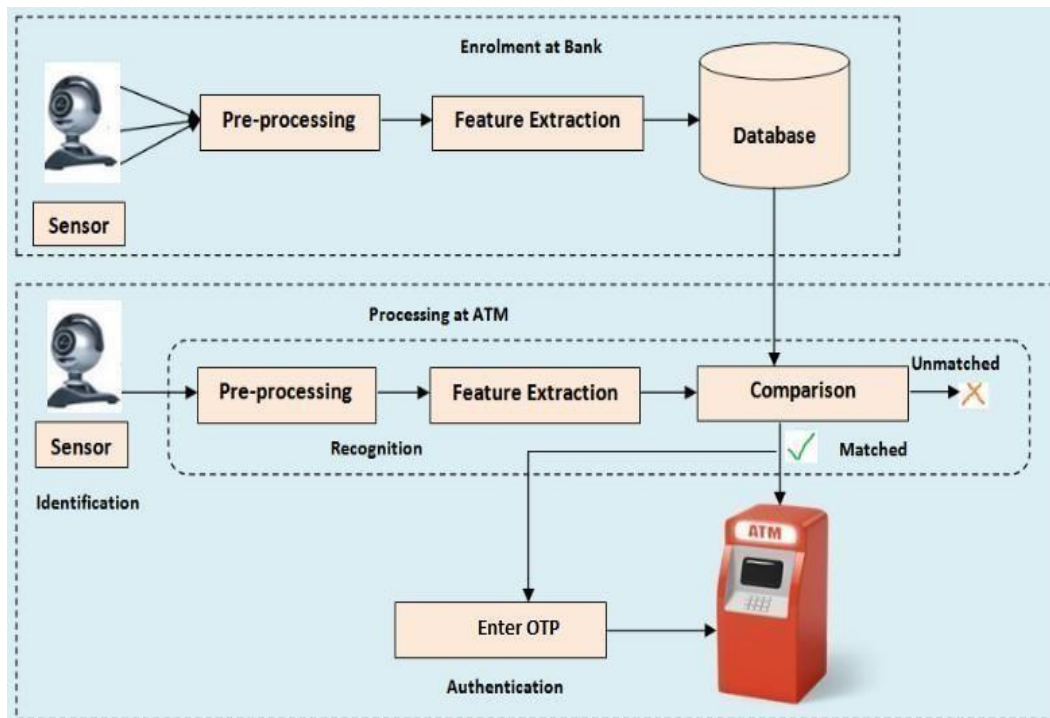
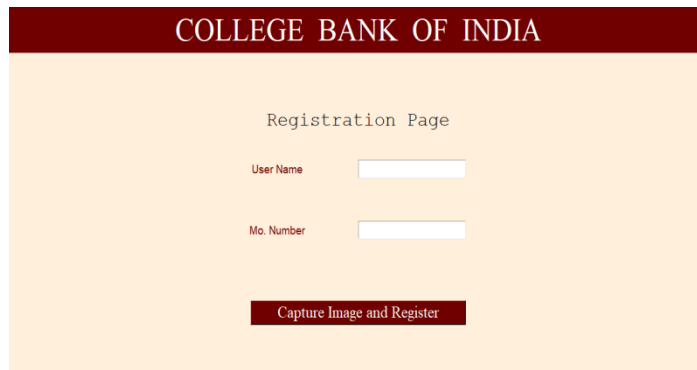


Fig.1. proposed system

Analyzed what problems people faced in the existing technology. This project helps to overcome the problem of complexity and provides the easiest way to secure the ATM transaction. Block diagram of the proposed system is as shown in figure above. Camera is used for authentication of the user. Using Keypad and the camera of PC/laptop. Whenever a person enters an ATM camera captures an image and displays information about him. GUI (Graphical User Interface) is developed for user and system interactions. A Camera, which along with face recognition comprises two levels of security. When face and OTP are matched then the customer's account will open in the ATM machine. GUI will display user name, debited money, authentication status etc.

The following figures are showing the working of the system. fig. 2 shows user will register itself by using username and mobile number, then in fig. 3 camera will open to capture the face of the user for security verification, after detecting the face if its valid user then OTP will be sent to registered mobile number for verification according to fig. 4 & 5. If OTP and face both are valid and matched then users can perform further operations shown by fig. 6 & 7.

IV. Results



COLLEGE BANK OF INDIA

Registration Page

User Name

Mo. Number

Capture Image and Register

Fig.2.Registration Page



COLLEGE BANK OF INDIA

CAMERA ON

Fig.3. Open Camera



COLLEGE BANK OF INDIA

Welcome ajay

OTP is send to your registered Mobile Number

ENTER

Fig.4. Enter OTP

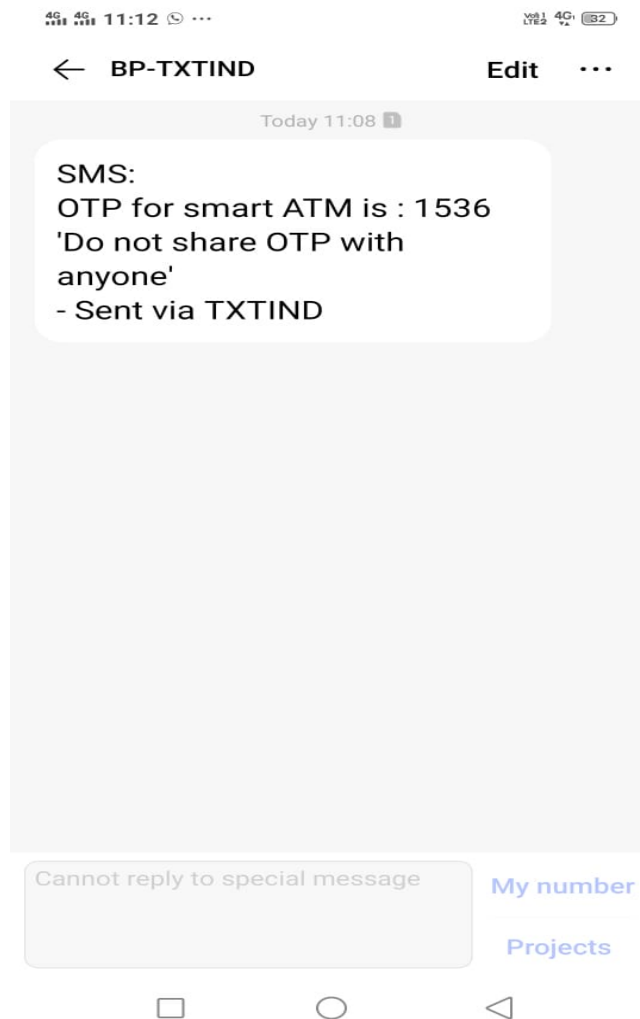


Fig.5. OTP On Your Mobile

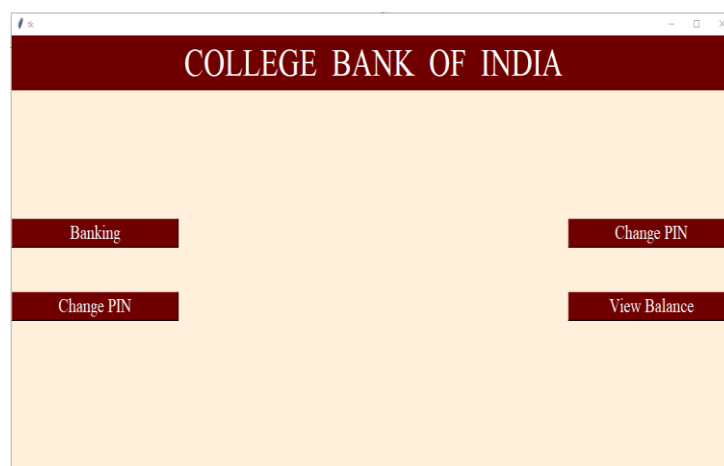


Fig.6. Banking Option

	Account balance	Withdrawal amount
SBI :	9000	1000
HDFC :	9500	500
ICICI :	10000	5000

CONFIRM

Fig.7. Amount Withdrawal Amount

V. Conclusion

The adoption of the ATM as an electronic banking channel has positively impacted the banking industry worldwide because it is very effective and convenient for bank customers. The advent of ATM fraud has however been a menace for many banks all over the world and many banks now aim to eradicate fraud costs to the bank. The proposed system can provide a practical and workable solution that addresses the requirements of the regulatory authority of the banks. In this project user can manage his/her multiple accounts in various banks by cardless transaction and need not have to carry ATM card and remember its password. In this project OTP provides a more viable method of identifying a user's sufficient security level for the ATM system. The security features were enhanced largely for the stability and reliability of owner recognition. In general, it will positively impact the banking industry and the society by reducing the rising levels of crimes that are associated with ATM transactions.

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