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Biometric Multimodel Authentication ATM

Kumar Satyam[1], Deepak Kumar[2], Shubham Dubey[3]

B.Tech In Computer Science & Technology, Galgotias University Greater Noida, India

***Abstract* :** In this project we have done on biometric authentication system that is finger print authentication system. Biometric authentication system is used for different purpose in place of visa cards or automated teller machine (ATM) cards because of the visa or ATM card and the password is forgotten during a person travel from one place to other place. Due to difficult to remember and memorize of this two things (visa cards and password) we design this biometric authentication system, since biometric authentication system is safe and secure, unforgettable and also very easy to use everywhere. Biometric authentication system is reliable, economical, save time, and has more advantage compare to other like visa cards. The user suspect their password may be stolen or attack by thief then the user change their password when they expect the password attack by the thief. In order to solve this kind of problem we design biometric authentication system (finger print), because biometrics is the science of using human measurements to identify people. This technology not only make our lives easier and simple by reducing the required to carry identification but also it prevents the use of forget visa card or ATM and passwords . Biometric is selective because of why? It has unique characteristics that is no one shares and remain the same over time . In this project we have survey on biometric authentication system. Biometric authentication system is used for various kinds of authentication system instead of the tension of cards to put with them and to memorize their difficult passwords and pin numbers. Biometric authentication system is much safe and secure and very easy to use and even without using any password or secret codes to remember as compare with previous system like credit card payment system ,wireless system and mobile system etc. Biometric authentication system is reliable, economical and it has more advantage as compare with others. In daily life the usage of credit cards, check cards for shopping, bus card, subway card for traveling, student card for library and department , and many kinds of cards for unlimited purpose and so on. So problem is that a person has to take many cards and has to remember their password or secret codes and to keep secure to take with it all time. So the biometric authentication system will solve this problem. Greater adoption of biometric authentication system will drive down the cost of biometric readers and thus making it more affordable to small business owner .

Keywords— Biometric; ATM; Fingerprint; Cryptography; Low Power

INTRODUCTION

Biometric ATM Based ATM is a desktop application where fingerprint as well as one time password(OTP) of the user is used as a multi model authentication. The finger print as well as OTP minutiae features are different for each human being so the user can be identified uniquely. Instead of using password Fingerprint As well as OTP based ATM is safer and secure. User can use his fingerprint instead of using ATM cards. There is no worry of losing ATM card and no need to carry ATM card in your wallet. You just have to use your fingerprint in order to do any banking transaction. The user has to login using his fingerprint and he has to enter the OTP(sent to his registered mobile number) in order to do further transaction. The user can withdraw money from his account. User can transfer money to various accounts by mentioning account number. In order to withdraw money user has to enter the amount he want to withdraw and has to mention from which account he want to withdraw (i.e. saving account, current account) .The user must have appropriate balance in his ATM account to do transaction. User can view the balance available in his respective account. The system will provide the user to view last 5 transactions.compliance to electronic requirements that facilitate the concurrent or later production of electronic products, and (3) conformity of style throughout a conference proceedings. Margins, column widths, line spacing, and type styles are built-in; examples of the type styles are provided throughout this document and are identified in italic type, within parentheses, following the example. Some components, such as multi-leveled equations, graphics, and tables are not prescribed, although the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.

I. BACKGROUND

ATM, the abbreviation of "Automated Teller Machine" allows the account holder to have transactions with their own accounts without the opportunity to access the entire bank's database. The idea of self-service in retail banking was

developed through independent and simultaneous efforts in Japan, Sweden, the United Kingdom and the United States. In the USA, Luther George Simjian has been credited with developing and building the first cash dispenser machine. The first cash dispensing device was used in Tokyo in 1966.

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A. Verification mode

First, In the verification mode, the system validates a person's identity by comparing the capture biometric data with his/her own biometric templates stored system database.

In such a system, an individual who desires to be recognized claims an identity, usually through a PIN(Personal Identification Number), a user name, a smart card etc…, and the system conducts a one to one comparison to determine the claim whether the claim is true or wrong Generally identity verification is typically use for positive recognition, where the aim is to prevent many people from the same identity.

B. Identification mode:

The In this mode the system recognizes an individual by searching the templates of all the user in the database for a match. As a result the system conducts a one to many comparison to establish an individual identity without the subject having to claim an identity for instance "whose biometric data is this? "Identification is a critical component in negative recognition application where the system establishes whether the person is who implicitly or explicitly denies to be. The purpose of negative recognition is to prevent single person from using multiple identity's.

Identification may be used in positive recognition for convenience that the user is not required to claim an identity while traditional method of personal recognition such as passwords, PINs, keys, and tokens may work for positive recognition can only be established through biometrics.

II. WAY OF BIOMETRIC SCANNING

There are many ways for biometric scanning's e.g. retina scan, face recognition, fingerprint identification etc. available and in practice. These can be summarized as:

A. Fingerprint Verification

The fingerprints of any person remains the same

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throughout the life and no two fingerprints are ever same. But for this to work accurately it requires clean hands without having any injuries to their prints otherwise it'll prevent proper identification .

B. Face Recognition

This is one of the most flexible methods as it can be done without the person being aware that they are being scanned.

C. Scanning of Retina

In The pattern of the blood vessel at the back of every eye is absolutely unique and is never changing. The disadvantage of this system is that it takes around 15 seconds of cautious attention to complete a good scan .

D. Scanning of Hand Geometry

This will work in insensitive working environments. It is not measured as intrusive and often used in industrialized environment .

E. Iris Scanning

This is also very difficult to reproduce and stays the same with your entire lifetime. But obviously it is difficult for children and the sick people .

F. Voice Analyzing

This method of security biometric can be implemented and tested without the person's awareness .

III. WORKING OF BIOMETRIC PROCESS

The detail of the human being which differs from one person to other is used as unique biometric data to provide as that person's unique identification (ID) or recognition. The body parts such as retinal, fingerprint, iris, palm print and DNA. Biometric system collects and stores this data in order to verify any person's identity. The combination of biometric data and biometric identification/recognition technologies creates the biometric security systems. Biometric system is more and more personnel than anyone's passport .

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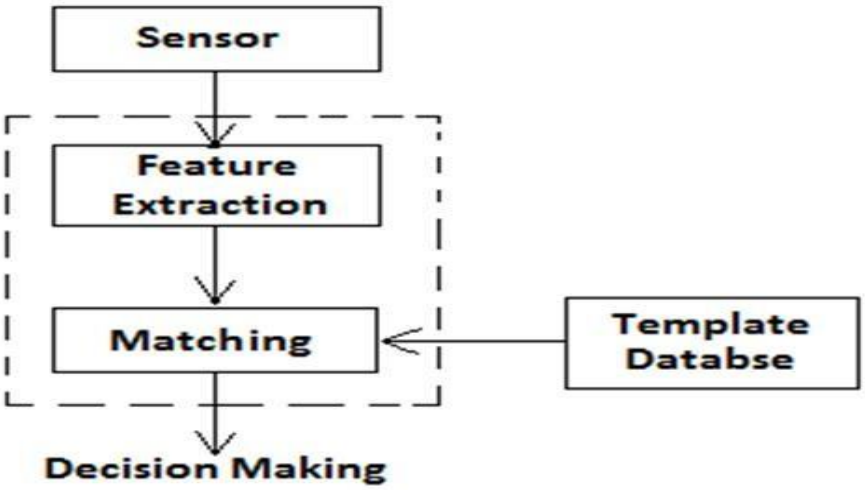

The functionality of block diagram of biometric system can be explained in below steps

1. *Capturing biometric data:* When user places the finger or palm at the sensor, the biometric data is presented to the capturing device.

2. *Pre-processing stage:* This is the stage before the feature extraction. Here biometric data is recorded and pre-processed by improved input from the sensor. It removes extra noises and distortions. The input is maintained to get the required format for maximum extraction.

3. *Feature extraction:* In this stage, the pre-processed data is extra processed and features are extracted in a best possible way. Because not all the data captured is required for biometric assessment.

4. *Template creation:* After feature extraction process is complete, a template is created from entire significant characteristics taken out from the users. The unnecessary data which is not required for the comparison algorithm is washout to reduce the file size and protect the privacy and security of user identity.

5. *Storage of the template:* Here template is get stored in reusable database, which can is needed at the time of execution of the matching process.

6. *Matching phase:* This is the last step that involves an algorithm to perform a comparison between the template already stored in the database and the template obtained for decision making. After the decision making the result is then passed on to some application device for further actions.

IV. FEATURES

a) *Add Pin Code* - User has to scan finger and add pin code in order to do transactions .
b) *Withdrawal of the cash* - User can withdraw cash by entering the amount he want to withdraw .
c) *Transfer of money* - User can transfer cash to other account by entring the account number he wants to transfer .
d) *View balance* - User can view balance which is available in his respective account .
e) *View transaction* - User can view last five transactions .

INVESTING IN BIOMETRIC SECURITY SYSTEM

Now day's biometrics technology is becoming cheaper for both in its application and practice. Financial bodies like banks and other organizations need to think on it and should spend extra effort and money in biometric technology and they should also endorse as a way of securing commercial transactions, across the counter and at the same instance while using the ATM. To provide protection for executing transactions in this manner, financial bodies can also offer more and more extra services at the ATM which can make more profits and slash down on the cost of services . If

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financial institutions are offering support for different type of services at the ATMs they can decrease the population at the bank counters. This will be a benefit to the organizations because they will absolutely get return in offering the services at the ATM centers. With the advancement of such technologies, we have to further educate customers and clients for the best practice to change their ATM pin numbers. And they should know that not to use common numbers related to that person such as date of birth, car registration number, cell phone digits etc This awareness and education will certainly help everyone to go a long way in reducing the higher level of ATM fraud around the world. Installation of ATMs in a secure, public environment, with CCTV camera may also help out in reducing the ATM frauds.

V. BENEFITS OF A BIOMETRICS SECURITY SYSTEM

Using biometric devices over the traditional security devices has greater advantages. As everything is going global and more and more transactions are taking place through online, banks and other financial organizations people are implementing biometrics to secure the identity and money. Benefits of biometric security can be given as:

- There are possibilities of hacking keys or duplicated ; signatures could be forged, passwords could be easily stolen or hacked by a specialist people. To avoid all these accidental losses; we should enter biometric security and all our fears could be laid to rest. Biometrics security system simply allows identifying yourself by your inherent biological features like eye, finger prints, voice; facial characteristics etc. by verifying your biological or physical characteristics you can authenticate yourself very easily just like your signature on a check.

- Signature biometric security verifies the way the user signs his name. In this technique the speed and pressure applied by the user is measured. This type of verification is done normally in transaction related operations.

- In every type of biometric security verification, the finger print is used heavily. It is still playing a most important responsibility in biometric security system. When the user's or approved person's finger print is entered into the security system only he or she is able to access the computer or can proceed to a secure region. Biometric devices verify every time you try to enter. So, they are allowing only authorized people to proceed and hence reducing the chance of frauds up to negligible level.

CONCLUSION

As we can see that security concerns have risen to very high levels as terrorism and other unseen dangers are around which cause huge damage to human life and intellectual property. To safeguard against all these high quality technical attacks and intrusions we need equally sophisticated biometric security systems. Biometrics security system has revolutionized the way people generally perceive security. The only hurdle to deploy these seemingly fool-proof security measures is people's acceptance. Once issues and objections like invasion of privacy, undue physical harassment etc. are sorted out, biometrics security products will have more acceptance from people and will work out as the most effective security system ever. Biometric systems along with the existing systems and technology can produce a very well protected system where consumer can have rest from all their worries related to the money theft, identity theft etc.

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