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IRIS BIOMETRIC CONTROLLED SMART BANKING MACHINE EMBEDDED WITH GSM TECHNOLOGY FOR OTP

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ABSTRACT:

Frauds attacking the automatic teller machine have increased over the decade which has influenced us to use the biometrics for personal now describes a system that replaces the ATM cards and PINS via the physiological Biometric fingerprint and iris authentication. Moreover, the function of one time password (OTP) imparts privacy to the user. In this system during enrollment the genuine user's fingerprint and iris sample of are retained in the database. The technique of transcation starts by using capturing and matching fingerprints and iris pattern. A GSM module will message a 3-digit code generated by way of the system to the registered mobile number. After the valid OTP is entered the user can either withdraw or deposit money.

INTRODUCTION:

A 24 X7 Self banking provider has made the ATM the heart of banking. The surplus use of ATMs has now not only lead to a incrase in their number but has also exended fraudulent attacks on the ATMs. This calls for the biometric systems to be built -in in the usual ATM. The writer in Built an ATM Primarily based on fingerprint verification and incorporated the fignerprints of the users into the database of the respective banks to simulate it for ATM operations. Due to the lack of the fingerprint matching algorithm its proved to be inefficient. Proposed a system which carried out authentication by including each the fingerprint and GSM technology in to the traditional PIN primarily based ATM system. In an algorithm was constructed primarily based on Short Message Service (SMS) signification to enhance the ATM authentication system. Authors in secured the system the use of fingerprint and iris, along with this the system used RFID reader module. Developed a RFID card as enter to the

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microcontroller for identification and a GSM module to ship messages involving three picks (yes, no, action) to the approved user's mobile. Authors in proposed an efficient system which used the method of analyzing iris patterns for person identification. In a system using iris recognition and palm vein recognition technology was proposed in order to avoid crimes in the ATM transactions. Authors in proposed a gadget which incorporated facial recognition in the traditional ATM for authentication of users. In authors used Hough Transform for iris recognition in order to isolate the special facets particular structure within an image. In an Advanced Encryption Standard (AES) algorithm was once used in order to enhance the safety of the ATM transaction. The system performed facial recognition using Principal Component Analysis for facial recognition along with OTP for security of transcation. This proposed machine utilizes trivialities matching set of rules for fingerprint recognition and circular Hough transform for iris recognition.

EXISTING SYSTEM:

In the existing banking system, customer typically rely on traditional method of identification and authentication, such as pawwords, PINs, or physical identification documents. However, these method can be prone to security vulnerabilities, including unauthorized acces, password theft, or identify fraud . Additionally, customers may face inconveniences, such as the need to remember multiple passwords or carry physical documents for every transcation. Existing banking system gives unique four- digit number to all account holder. Whenever they need to access the ATM they enter the four-digit number. It is the simple method transaction and statistical, so that hackers can easily extract the numbers and access others accounts. Thus this is focused our attention on security towards banking sector. Biometrics has the feature of unique characteristics so the biometric based banking system emerged. During the creation of the account in the bank, the account holder's image and other details is being saved in the database. During transaction, the image is compared if both the image matches, the transaction permitted else declined. ATM is an Automated Teller Machine is invented in order to make the money transaction work easy and to make the availability to withdraw money in all emergency situation. All the account holder can access their account by giving them the PIN number. The PIN number accessing method is implemented in all devices like car, door, etc. Later it became insecure and easy for the hackers to hack those PINs. So

this is increased security by using face recognition techniques with three different angles at a time. Face recognition starts with face scanning using high resolution camera, workstations, and software and back-end processors. Scanning is to capture the facial characteristics such as distance below the eyes, mouth, or nose and face cut of person. Devising a face grid algorithm and an effective ATM simulator forms is the main focus of future research. This is focused on the security over money transaction because of the growing direct or spoofing fraudulent activity of thieves. This is proposed system is more secure by providing personal identification by analyzing the biometrics like fingerprint, iris recognition. Since they are uniquely bound to individuals. This idea provides paper less banking environment and a secure ATM access. In this banking sector the samples of the fingerprint and iris along with the mobile number of the customer is saved in the database. Once the customer wants to access their account the image of the customer is captured and compared with the samples saved in the database. Once the valid customer is found three-digit code will be sent to the registered phone number. This process is done using a GSM modem with the ARM7. The sent OTP and the entered OTP is being checked if it is verified then the system allow for transaction else the account will be blocked.

PROPOSED SYSTEM:

The eye image of a person was once captured The use of a web PC digital camera or was once stored between 640x480 pixels in bitmap format .The Hough Transform Detected the iris Then pupil boundaries. After capturing the question eye image a feature vector over the input pattern was obtained within the same manner as it was decided for the duration of enrollment. This feature vector was compared including these feature vectors current within the database if the person used to be a valid man or woman afterward after running the GUI based on circular Hough Transform a message “MATCH” will remain displayed concerning the monitor, also a news “NO MATCH FOUND” is displayed. Investigations exhibit that the iris recognition system used among this work provides about 95.6% accuracy. This proposed system utilizes Red-Tacton module instead of the debit card used in the ATM sector. The Red-TACTON module transmits a details of the account holder stored inside the Red-TACTON transmitter through human body. The controller checks the received data of the

Red-tacton and waits for the user to match the IRIS details. Now the User will perform IRIS recognition. During the enrollment stage, we store the details of the user for the respected Red-Tacton device. Now the user's IRIS is detected by the MATLAB software. And MATLAB provides the data to the controller indicating the result of the user's IRIS detection process. If the matching of iris recognition is done, then MATLAB gives data to controller. Now the ATM mechanism starts working. behalf of Once the Matching is performed, the motor is activated. In the case of emergency situation if the user friend went for the ATM the user then the IRIS is not matched. Then the System prompts the user with an OTP through GSM module to the user and the user can inform the OTP to his friend then the Motor starts to indicate that the User's friend is authenticated to access the ATM. Now the user can type the OTP on keypad.

A. Iris Recognition Segmentation: Isolate the actual iris region from

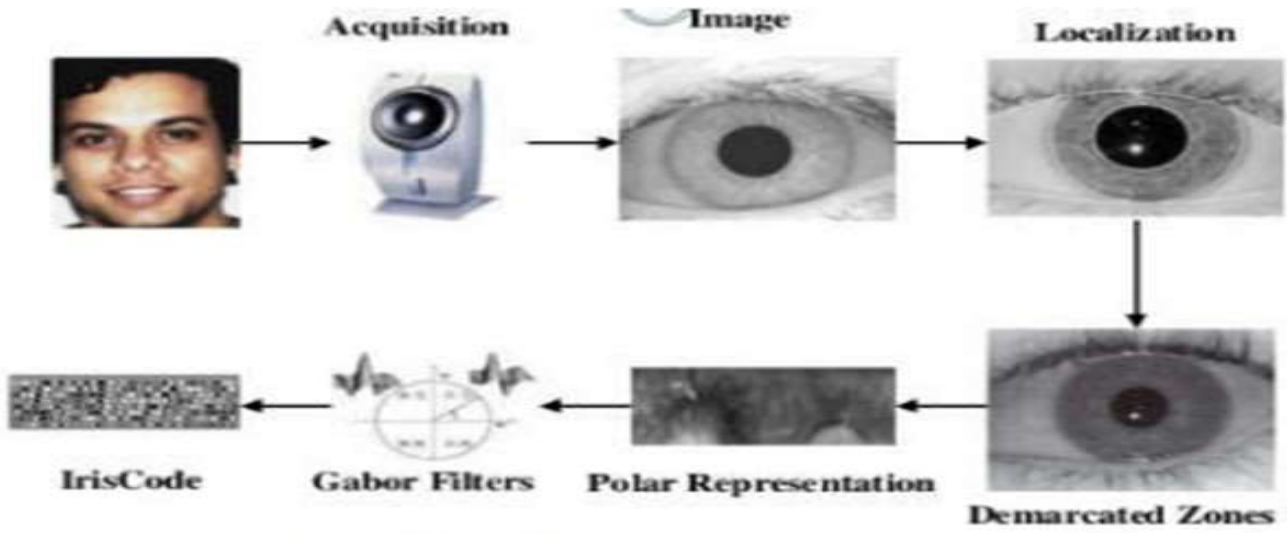


Fig.3 Iris Recognition

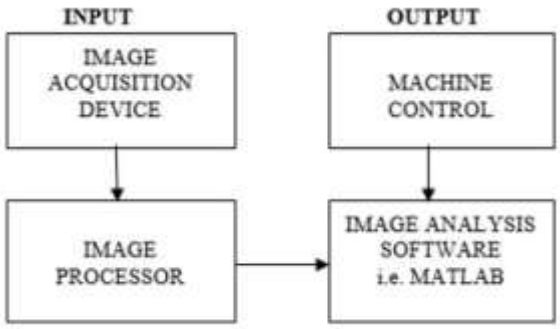
RELEVANT WORK :Existing banking system gives unique four-digit number to all account holder. Whenever they need to access the ATM they enter the four-digit number. It is the simple method transaction and statistical, so that hackers can easily extract the numbers and access others accounts. Thus this paper [6] focused our attention on security towards banking sector. Biometrics has the feature of unique characteristics so the biometric based banking system emerged. During the creation of the account in the bank, the account holder's image and other details is

being saved in the database. During transaction, the image is compared if both the image matches, the transaction permitted else declined. ATM is an Automated Teller Machine is invented in order to make the money transaction work easy and to make the availability to withdraw money in all emergency situation. All the account holder can access their account by giving them the PIN number. The PIN number accessing method is implemented in all devices like car, door, etc. Later it became insecure and easy for the hackers to hack those PINs. So this paper [19] increased security by using face recognition techniques with three different angles at a time. Face recognition starts with face scanning using high resolution camera, workstations, and software and back-end processors. Scanning is to capture the facial characteristics such as distance below the eyes, mouth, or nose and face cut of person. Devising a face grid algorithm and an effective ATM simulator forms is the main focus of future research. This paper [5] focused on the security over money transaction because of the growing direct or spoofing fraudulent activity of thieves. This proposed system is more secure by providing personal identification by analyzing the biometrics like fingerprint, iris recognition. Since they are uniquely bound to individuals. This idea provides paper less banking environment and a secure ATM access. In this banking sector the samples of the fingerprint and iris along with the mobile number of the customer is saved in the database. Once the customer wants to access their account the image of the customer is captured and compared with the samples saved in the database. Once the valid customer is found three-digit code will be sent to the registered phone number. This process is done using a GSM modem with the ARM7. The sent OTP and the entered OTP is being checked if it is verified then the system allow for transaction else the account will be blocked. Because of the rapid growth of bank, everyone demand a transaction should be more secure and faster in ATM (Automated Teller Machine). Since Biometrics has a unique recognizing characteristics the biometric technology used all over for the transaction in ATM. Biometric technology in many different sectors provides a data privacy and a secured transaction. When comparing the features of other biometrics like handwriting, voice, iris, voice and fingerprint, fingerprint authentication is accepted widely. The paper's [18] proposed System provide a faster and secured transaction by providing fingerprint based transactions. The server

will have several samples of user's fingerprint, during transaction the person who tries for transaction fingerprint is taken using fingerprint scanner and the fingerprint will be compared with all the samples in the server and if that fingerprint is present in that database the person will be allowed for transaction else the process will be blocked. This fingerprint module can also added with Point Of Sale (POS) machine to eliminate the purpose of using physical debit cards. This proposed system is effective if the user has only one account if the user has many accounts in different banks this system cannot deal. So that in future, this system will be enhanced by using the same fingerprint used to detect all the accounts the user holds in different banks.

MATLAB LANGUAGE

The MATLAB Language provides native support for the vector and matrix operations that are fundamental to solving engineering and scientific problems, enabling fast development and execution. With the MATLAB Language, you can write programs and develop algorithms faster than with traditional languages because you do not need to perform low-level administrative tasks such as declaring variables, specifying data types, and allocating memory. In many cases, the support for vector and matrix operations eliminates the need for for-loops.



RESULTS FOR OTP

After the valid biometric identification a message "ACCESS CODE" SMS was once obtained of the user's registered mobile number simultaneously a message "ENTER THE CODE" was once displayed on the LCD. After the valid code was entered the system proceeded towards the banking process. But now the wrong code was entered an SMS "UNKNOWN PERSON TRYING TO ACCESS" was received on the user's registered mobile number.

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Fig 5.OTP received from GSM

Fig 6.OTP being entered via keypad

CONCLUSION

This project is developed over the basis about more need of safety of ATM banking system. Now-a-day's ATM is getting much less securea long emerging methods to hack/crack ATM PIN then ATM card. The ATM user's money transaction is secured by adding the biometric or OTP in limitation of the existing system along together with this ATM machine is secured via the use of the tilt sensor.Here we are also maintining the sensor perform along including saving person time when smaller transaction is done by setting the limit of maximum money withdrawal. When extra money is being debited on afterwards we will test authentication the use of biometric. Along this ATM provision is also secured from he fraud attacks by way of the usage of tilt sensor then buzzer ,it everyone attempt after motion the ATM machine there will be buzzer alert

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