

Biometric based Secured ATM Transaction incorporating GSM Technology

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Abstract:- This project deals with the solutions related to the ATM (Automated Teller Machine) transaction security. Today, ATMs and Debit cards are used for the purpose of money transactions which play a vital role in the nature of trade. The weaknesses of existing authentication scheme such as password and PIN number caused the leakage of information stored in ATM smartcard which lead to the loss of money in bank account and private information misuses. To overcome this shortcoming of piracy in money transactions. All these factors are verified for the authentication purpose of the user along with atm scanning and biometric verification. Parameter are differing and then the link is generated to the User's Mobile number for further more secure authentication system. In the modification phase, an automation user Internet (Bank server) recognition model using mobile is designed to enhance the user comfort and detection of the time span spend by the user in the ATM machine.

Keywords: Classification, Fraud Detection, K-Nearest Neighbor Algorithm, Outlier Detection.

I.INTRODUCTION

In the war of functionality versus security, the functionality wins more often. Security has always been viewed upon as an overhead or afterthought by software developers. But in the case of banking and money transactions, the security should hold highest priority. Increase in daily attacks on ATM and banking security the developers getting on right track and putting security their important aspect in developing projects. The multifactor authentication is an approach to authentication, which requires the presentation of two or more authentication factors: a knowledge factor ("something only the user knows"), a possession factor ("something only the user has"), and an inherence factor ("something only the user is"). After presentation, the other party for authentication to occur must validate each factor. In present days the ATM holds only one thing (i.e. PIN) to secure the money saved in the bank if we are not considering the physical attacks. In our system, we are going beyond this level of security to enhance ATM security for money transactions. We introduce the concept of Biometric verification and SESSION LINK in ATM banking. Our system will provide the second level of security using different factors to

generate SESSION LINK. This will send over customer's mobile number & stored in records.

In secure ATM, user will have to register mobile and its IMEI number in bank system. When user puts/swipes card into machine, user get request to insert PIN (which is current way of ATM banking). In the proposed system user will get SESSION LINK on mobile. When user enters SESSION LINK to the system, he/she will be having access to the machine else no transaction can be made. First word ATM stands for Automated teller machine, a machine that allows customers of a Banking institution to transact banking business without any help of a cashier i.e.

Human clerk known or human bank teller. Automated teller machine also called automated banking machine. In some part of world it is also known as whole in the wall or cash point or cash line. An automated teller machine is a computerized telecommunications device. With rapid growth in Information technology sector in from the past decade, daily new inventions

are taking place in market. In financial sector especially the banking sector there are so many new technologies are taking place in financial operations. ATM is an important invention for banking sector. The innovations of modern and information technology have made it feasible for bank clients to interact and carry out banking facility with Automated teller machine and to receive the cash directly from the machine or make deposit including checks without assistance of human Being. Automated teller machine is part of Electronic banking and is new services which are being offered by at present by most of banks in core banking sector to its customers. Electronic banking offers other services also apart from Automated Teller Machine such as direct business deal purchase/ sale through Point-Of-Sale (POS) and Telephone banking and so on. One of the main reasons for banks more inclinations toward Automated teller machine is day by day rising cost of setting up and operating bank branch whether full-fledged branch or extension counters and it has lead to sharp increase in Automated teller machine being installed by the banks.

Automated Teller Machines have found its rapid popularity not only because of low in banks transactions costs but also due to customer’s convenience and thereby it is become need of the day in common men life. There is always two sides of a coin, the Automated Teller Machines which facilitates the customers by providing better service is has also darker side. A number of customers have faced cheating and frauds through Automated Teller Machines by withdrawals, withdrawal from their account not transited by client himself and thereby customer have some time unpleasant experience by customers. It is challenge now for the manufacturer of Automated teller machine how to minimize the frauds for keeping Automated teller machine in functioning with its popularity being kept intact.

II.LITERATURE REVIEW

Sneha Ramrakhyanietal[1]theauthorusesBiometric is used for personal identification. Here we are using Fingerprint scanning biometric to provide access to ATM for money transaction. Data of a fingerprint is stored in database using the enrollment process through the Bank.

Dineshkumaretal[2]theauthorusesauthenticates the user each time he/she applies for access to ATM Services.In this authentication system, the biometric authentication may be one way of authentication.

Moses OkechukwuOnyesolueta[3]A fingerprint biometric technique is fused with the ATM for person authentication to ameliorate the security level.Fingerprints have a wide variation since no two people have identical prints.

Mithun Duttaetal[4]The chip of S3C2440 is used for the core of microchip in ARM9, moreover, Associate in Having improved enhancement algorithm of fingerprint image increase the security that client use the ATM machine.GSM Fingerprint Recognition, Image Enhancement, Gabor Filtering are the highlights of this concept Pennam Krishnamurthyetal[5]In these systems, Bankers will collect the customer finger prints and mobile number while opening the accounts then customer can only access in ATM machine.ARM9; fingerprint recognition; image enhancement; GSM MODEM are the Highlights of this concept.

III.EXISTING SYSTEM

There is no security layer is implemented in the ATM card except PIN number. It is very costly to include fingerprint and Iris scanner in normal transaction. ATM card falling into wrong hands, and the PIN number being cracked by a stranger. Then stranger can easily use the ATM card. It is possible that the machine is tempered and read wrong information as correct information. It is also possible that the magnetic strips hold legitimate information but that card is duplicated. PIN can be hacked by any means like shoulder surfing, mutual friends, family friends etc. After PIN is correct, there is no one who can

catch attacker to steal money from bank. It is just like stealing from cupboard.

IV.LIMITATION

ATM card falling into wrong hands, and the PIN number being cracked by a stranger.It is also possible that the magnetic strips hold legitimate information but that card is duplicated.After PIN is correct, there is no one who can catch attacker to steal money from bank. It is just like stealing from cupboard.

V. PROPOSED SYSTEM

All these factors are verified for the authentication purpose of the user along with atm scanning and biometric verification. If any of the above said, parameter are differing and then the link is generated to the User’s Mobile number for further more secure authentication system. In the modification phase, an automation user Internet (Bank server) recognition model using mobile is designed to enhance the user comfort and detection of the time span spend by the user in the ATM machine. The system improves the security of ATM’s. Use of Biometric and link provides second level of security. The system is cost effective and cheaper than usual ATM systems.

VI. ADVANTAGES

1. The system improves the security of ATM’s.
2. Use of Biometric and link provides second level of security. The system is cost effective and cheaper than usual ATM systems.

VII. SYSTEM REQUIREMENTS

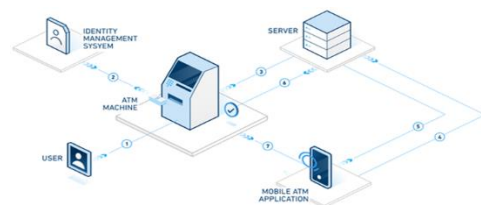
Hardware Requirements

Hard disk	:	160 GB
RAM	:	4 GB
Processor	:	Core i3
Monitor	:	15inch’’Color Monitor

Software Requirements

Front-End	:	JAVA, XML
Back end	:	SQL server
Operating System	:	Windows 10
ID	:	Android Studio

VIII. SYSTEM DESIGN



IX. METHADODOLOGY

1. Security is the serious issue in ATM system. Whenever ATM card is inserted into the ATM card slot, the system requires PIN to authenticate the user.

2. Accessing of ATM machine using PIN number has become less secure because they are easily traceable. Chances of missing and misusing ATM card has been increased.

3. The existing security in the ATM system has not been able to address these challenges. To overcome these challenges, the proposed work involves biometric security. By introducing Fingerprint based ATM system all the people can use the ATM because of user friendly.

4. In our system, we don't want to carry ATM card and so that loss of ATM card and charring card in wallet have been reduced.

5. Because of that we are mainly concentrating in illiterate people. Fingerprint technology in particular, can provide a much more accurate and reliable user authentication method.

6. This system allows user to make banking transaction through the use of their fingerprint. The fingerprint minutiae features are different for each human being. Hence it is used for more accurate authentication.

7. After biometric verification, the user will be allowed to proceed with the transaction. When we introduce this system all the customers able to do their transaction quick and safe.

8. Because when the entire customers want to deposit cash or withdraw their money, they all want to do their transaction immediately. Customer doesn't want to wait in the queue to do their transaction. So all are trying to save their time.

9. Insecure ATM, user will have to register mobile and its IMEI number in bank system. When user puts/swipes card into machine, user get request to insert PIN (which is current way of ATM banking).

10. In the proposed system user will get SESSION LINK on mobile. When user enters SESSION LINK to the system, he/she will be having access to the machine else no transaction can be made.

X. MODULES DESCRIPTION

Admin module: In this mode the user fingerprint and mobile number are collected and saved at the time of opening the account.

User module: In this mode, the user fingerprint is validated with saved fingerprint for the identification, which is required to perform transactions. This software

system is designed as follows. In next step, the system is initialized to check specific task, such as checking ATM terminal, GSM module and so on, and then each module is reset for ready to run commands. Before accessing ATM system, the mobile number and fingerprint of the customer are needed to be authenticated.

Fingerprint sensing: in which the fingerprint of an individual is acquired by a fingerprint scanner to produce a raw digital representation.

XI. EXPECTED OUTCOME

1. As a result of the work proposed there will be benefit to human beings for the purpose of ATM security.
2. Without ATM card, we can access ATM through mobile.
3. By this way it's consider as more security than ordinary.
4. We can connect this process by web app through our mobile device.
5. Using this web app we can use ATM.

XII. CONCLUSION

Automatic Teller Machines is the most used technology in the increasing financial transaction of the current world. There are many possible way to misuse ATM card using PIN. Fingerprint recognition helps to achieve an authentic state of security access through verification and validation. Biometric are the safest means of preventing ATM frauds. The main reason for introducing biometric systems is to increase overall security. Biometric offers greater security and convenience than traditional methods of personal recognition. We have been able to develop a fingerprint mechanism as a biometric measure to enhance the security features of the ATM for effective banking.

XIII. REFERENCES

- [1] Sneha Ramrakhyani, Manisha Meshram, Lata Chandani, Rasanjali Gothe, Parul Jha Fingerprint Based ATM System in International Journal of Innovative Research in Science, Engineering and Technology Vol. 6, Issue 11, November 2017.
- [2] M.R. Dineshkumar, M.S. Geethanjali, R. Karthika, M. Nagaraj, N. Vijayanandam Protected Cash Withdrawal in ATM Using Mobile Phone in Journal Of Engineering And Computer Science Vol 2 Issue 4 April, 2013.
- [3] Moses Okechukwu Onyesolu, Ignatius M. Ezeani ATM Security Using Fingerprint Biometric Identifier in International Journal of Advanced Computer Science and Applications April 2012.
- [4] Mithun Dutta, Kangkhita Keam Psyche and Shamima Yasmin ATM Transaction Security Using Fingerprint Recognition in American Journal of Engineering Research (AJER) Volume-6, Issue-8, 2017.
- [5] Pennam Krishnamurthy, M. Maddhusudhan Reddy Implementation of ATM Security by Using Fingerprint recognition and GSM in International Journal of Electronics Communication and Computer Engineering Vol 3, Issue (1) 2012.
- [6] Bhuvaneshwari. A. Jand R. Nanthithaa Shree Secure & Enhanced ATM with Biometric Authentication in International Conference for Phonexies on Emerging Current trends in Engineering and Management (PECTEAM 2K19) March 2019.

- [7] Saranya.K, Subetha.V, Subhasree.R A Highly Secured Fingerprint based biometric ATM Authentication system in International Research Journal of Engineering and Technology (IRJET) Vol 07 Issue 07 July 2020.
- [8] Avinash Kumar Ojha ATM Security using Fingerprint Recognition in International Journal of Advanced Research in Computer Science and Software Engineering Vol 5, Issue 6, June 2015.
- [9] S. Jathumithran, V. Thamilarasan, A. Piratheepan, P. Rushanthini, J. Mercy veniancy, P. Nirupa and K. Thiruthanigesan Enhancing ATM Security using Fingerprint in ICTACT Journal on Microelectronics, Vol 04, Issue 02, July 2018.
- [10] Mr. Mahesh Annasaheb Patil, Mr. Sachin PralhadWanere, Mr. Rupesh Pandurang Maighane, Mr. AashayRamratan Tiwari ATM Transaction Using Biometric Fingerprint Technology in International Journal of Electronics, Communication & Soft Computing Science and Engineering Volume 2, Issue 6.