



CASH WITHDRAWAL FROM ATM MACHINE USING QR CODE TECHNOLOGY

Jayashruthi¹, Feon Jaison²

Student, School of Computer Science and IT, Jain (Deemed-to-be) University, Bangalore, India¹

Professor, School of Computer Science and IT, (Jain Deemed-to-be) University, Bangalore, India²

Abstract: Nowadays, dependency on banking in the virtual world has been increased to the peak position. To make it consistent advanced technologies should be used. As OTP is currently used worldwide for security purposes, it can be overruled by QR code. Main advantage of QR code over OTP data storage. OTP can only confirm that the user is authorised user and not some third party is involved in this transaction while QR code not only confirms the authorised user but QR code itself can store information such as transaction id, transaction date, time and also amount of transaction. So, there is no need of explicitly keeping track of transaction every transaction.

Aim of this paper to enhance the functionality of ATM machine using android application. Proposed system is combining the ATM and mobile banking and minimizes the time of withdrawing cash from ATM. This will increase the speed of transaction almost three times fast; could have excellent impact on customer's satisfaction. With the help of QR code information get encrypted so it also increases security. As the population increasing ATM queues will be longer day by day. By implementing proposed system current system will not hampered, by doing some minor changes in existing system it will be possible to get cash within seconds. According to analyst report, cost of transaction using mobile application is almost ten times less than ATM and about fifty times less, if physical bank branch used.

I. INTRODUCTION

In previous decades, to withdraw the money, we have to visit nearest banks, standing for our turn in long queue, fill form with our credentials to give particulars/bank worker; only then we get the money. It was like a big task to withdrawal cash from our banking account and also we have to wait for a lot of time. Also customer needs to be present physically. There were many security issues. After some period, technology gear up and some great developers invented cash vending machine called ATM machine, which gives cash from specific banking account using a debit card. Then banks started to install ATM machines, which gives you money from your banking account within few minutes without filling any form like previous bank era. You can find ATM machine everywhere. But still sometimes, you have to wait in the long queue in front of ATM machine.

Customers are mostly using their smart cards while shopping or other transaction. But still there is need of physical cash at some places, for those consumers have to visit nearest ATM to get cash from his banking account. Nowadays, large numbers of ATM machines are available worldwide. In 2016, about 34000 ATM machines are available only in India. But because of increasing population which leads to increased users, still sometimes, we have to wait in a queue in front of the ATM machines. Sometimes, customers are in hurry, but to withdraw cash from ATM.

Customer have to wait long queue by doing nothing. Not only this, inside ATM also customer have choose many unwanted options repeatedly. Customers have to choose his language, type of account every time which is very hectic and time consuming process. Can't we do something to save our time to withdrawal the cash by doing some modification in existing ATM system, while standing in the outside waiting queue or on the way to ATM machine? Yes we can, by using this proposed system. 'Efficient Cash withdrawal using QR code technology.' Nowadays use of mobile applications are increasing; people are very habitual to use mobile app.

II. LITERATURE REVIEW

TITLE: Debit ATMcard Security

YEAR OF PUBLISHING: 22 May 2019

AUTHOR NAME: Gaurav Agrawal, Akash Singh

**ABSTRACT:**

Debit card or ATM card frauds had been a major sector of concern due to which Reserve Bank of India (RBI) has set new guidelines since December 1, 2013. Now you will have to enter your personal identification number (PIN) every time you swipe your card at any merchant outlet. Taking the existing state of affairs into consideration, in this paper the conventional security issues of the use of ATM and debit cards are discussed along with the feasibility of other alternatives. Then, the research paper will propose a model for secure use of the debit cards and ATM cards via Chaos function and QR code (DACQ model) that bolsters both speed and security without confounding the processor making it undesirable to users.

TITLE: Debit /ATM card security based on chaos function and QR code

YEAR OF PUBLISHING: 3 Jun 2021

AUTHOR NAME: Gaurav Agrawal

ABSTRACT:

Since December 1, 2013, new regulations have been in place as a result of the Reserve Bank of India (RBI) recognising debit card and ATM card fraud as a significant area of concern. Now, each time you swipe your card at a merchant outlet, you must enter your personal identification number (PIN). In this study, taking the current situation into account, the traditional security concerns of using ATM and debit cards are examined along with the viability of alternate alternatives. The study article will then put out a model (DACQ model) for speedy and secure use of debit cards and ATM cards using the Chaos function and QR code without confusing the procedure or making it unappealing to consumers.

TITLE: Mutual authentication for cardless ATM withdrawal using location factor

YEAR OF PUBLISHING: 3 sep 2020

AUTHOR NAME: Wilawan Rukpakavong, Kannikar

ABSTRACT:

Many banks offer cardless ATMs, using a mobile banking application on the smartphone to overcome the high risk of attack with traditional PIN-based cards. Several pieces of research into cardless ATMs have focused on security strengthening, while others have focused on improving usability. Extra hardware devices may be required to increase both security and usability. This paper presents a location-based mutual authentication scheme. This technique combines both security and usability to achieve usable security without requiring additional hardware at the ATM machine. In addition, this paper analyses and discusses the security and usability issues of the proposed scheme, comparing with other systems using a simulation study. The results show that the proposed system has higher security levels with an equivalent standard of usability.

TITLE: OTP Based Cardless Transaction using ATM

YEAR OF PUBLISHING: 02 Feb 2019

AUTHOR NAME: Wilawan Rukpakavong, Kannikar

ABSTRACT:

Banks provide ATM cards to customer to avail the services like cash withdrawal, PIN change, balance inquiry etc. But physical cards have some problems. It can be stolen, skimmed, cloned, hijacked, damaged or expired. Due to this problem, we need to think an alternate way to provide better security. Many researchers are thinking about cardless transaction through ATM. Iyabodeet. al. [1] proposed a conceptual model for cardless Electronic ATM through which customer can do cash withdrawal, balance inquiry, fund transfer etc. We have analyzed their protocol and found some flaws on this. This protocol doesn't specify what if it is off us transaction. Besides, customers get different categories of services but this protocol cannot determine which customer will get which category of services. That is why, inspired by this protocol we have proposed a modified model for getting same transaction facilities as exists which uses BPIN that will determine the bank identity (B) and a random Personal Identification Number (PIN) and One Time Password for authentication of the customer instead of biometric fingerprint because of major disadvantage of biometric authentication. And obviously it will use no card for accomplishing the transaction.



TITLE:Two Three Step Authentication in ATM Machine to Transfer Money and for Voting Application

YEAR OF PUBLISHING:02Jan 2019

AUTHOR NAME:K.Sudharsana ,V.D.Ambeth Kumara

ABSTRACT:

Votting plays a major role in electing a right person by the public to rule the country. The main aim of the paper is to perform two operations such as transaction of money and for voting application through ATM machine, by providing the authentication like Biometric – Fingerprint and Face Recognition through the comparison with the Aadhar car for more security and privacy. This voting application through ATM's makes more easier and faster for the people to increase the percentages of votes.

III. RESEARCH METHODOLOGY

Proposed System will consist android application and QRcode scanner in the ATM system. QRcode scanner is required to detect QRcode. information in stored in QRcode. Scanner need to be installed in the ATM machine to take input credentials from the user.It will authenticate all the details with the banks database. After successful authentication, cash will be dispensed by the ATM machine. ATM machine will responsible for validating the QRcode through user email id.Scanner need to be installed in the ATM machine to take input credentials from the user and send OTP to user email Id .if OTP is correct amount can withdrawal ,if OTP not match it will reject the transaction.

MODULE DESCRIPTION:

QR CODE Generator:

It is a niche tool that is used to generate different types of QR Codes. Depending on your purpose, you can use our generator to create QR Codes to open a website.A QR code (quick response code) is a type of two dimensional (2D) bar code that is used to provide easy access to online information through the digital camera on a smartphone or tablet.

ATM QR CODE SCANNER:

ATM QRcode scanner used to scan and extract details from QRcode, Extracted details used to get details from user.

OTP verification:

Extracted details used to OTP send to user email. ATM system will verify Email.

Amount Withdrawal:

Amount will withdraw after otp verification.

IV. IMPORTANTS OF CASH WITHDRAWAL USING QR CODE TECHNOLOGY

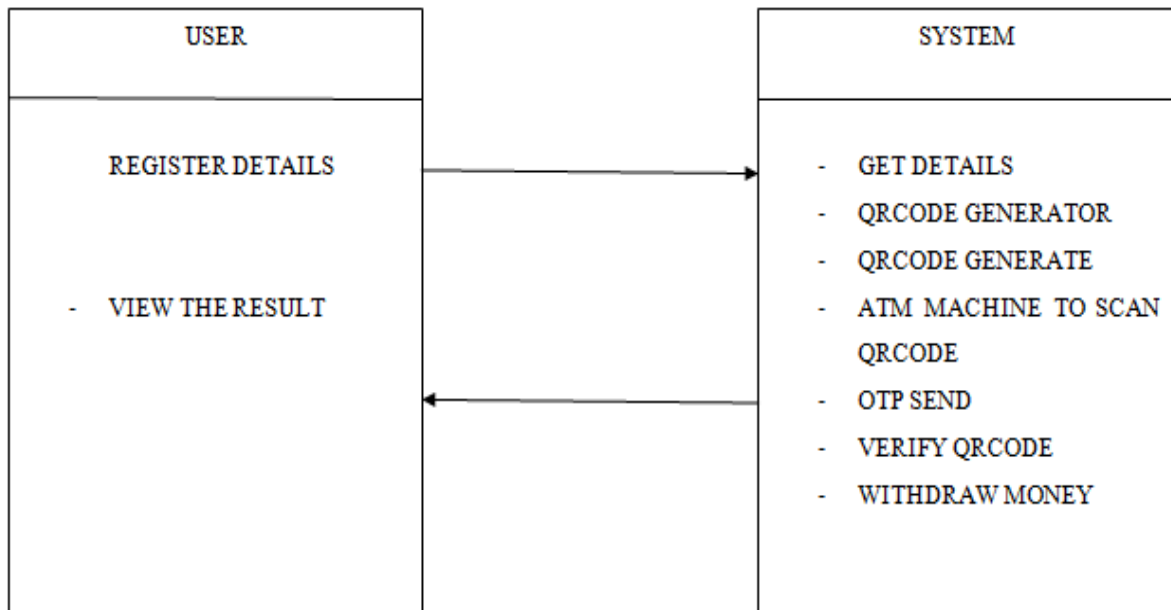
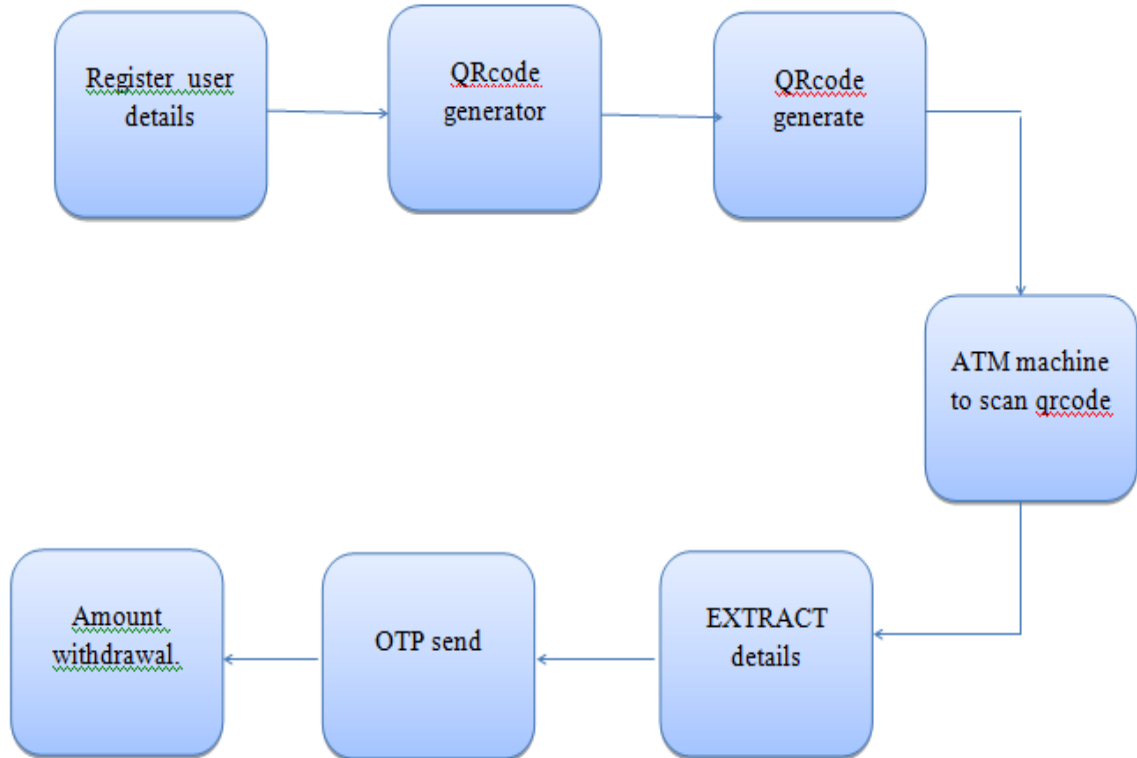
- Convenience: QR code technology makes it easy and convenient for customers to withdraw cash from ATMs without the need for physical cards. Customers can simply scan the QR code using their smartphones and withdraw cash quickly and easily.
- Security: QR code technology enhances the security of cash withdrawals from ATMs by reducing the risk of card skimming and fraud. This is because customers do not need to use their physical cards, which can be easily cloned or skimmed by fraudsters.
- Cost Savings: Using QR code technology for cash withdrawals from ATM machines can result in cost savings for banks and financial institutions. This is because they can reduce the costs associated with issuing physical cards and managing ATM networks.
- Increased Access: QR code technology can help increase access to cash withdrawals for customers who may not have access to physical cards, such as tourists or people who have lost their cards.
- Speed: Cash withdrawals using QR code technology are faster than traditional ATM transactions, which can reduce waiting times and improve customer satisfaction.
- Integration: QR code technology can be easily integrated with existing banking and financial systems, which makes it easier for banks and financial institutions to implement and adopt.

Overall, the adoption of QR code technology for cash withdrawals from ATM machines can provide several important benefits for both customers and financial institutions. It can improve convenience, security, cost savings, access, speed,



and integration, which can enhance the overall banking experience for customers and improve the efficiency of financial institutions.

V. ARCHITECTURE OF CASH WITHDRAWAL USING QR CODE TECHNOLOGY





VI. SOURCES OF CASH WITHDRAWAL USING QR CODE TECHNOLOGY

- **Mobile Banking Applications:** Many banks and financial institutions have mobile banking applications that allow customers to generate QR codes for cash withdrawals from ATMs. Customers can simply generate a QR code on their mobile phones and use it to withdraw cash from an ATM without using a physical card.
- **QR Code-enabled ATMs:** Some ATMs are equipped with QR code readers that allow customers to scan a QR code generated on their mobile phones and withdraw cash without using a physical card.
- **QR Code Stickers:** Some banks and financial institutions provide customers with QR code stickers that can be placed on their mobile phones. Customers can use the QR code on the sticker to withdraw cash from an ATM without using a physical card.
- **QR Code Cards:** Some banks and financial institutions provide customers with QR code-enabled cards that can be used to withdraw cash from ATMs. Customers can generate a QR code on their mobile phones and use it to authenticate their transactions when using the QR code card at an ATM.
- **Payment Wallets:** Some payment wallet providers, such as PayPal and Alipay, allow customers to generate QR codes that can be used to withdraw cash from ATMs.

VII. RESULT AND DISCUSSION

There have been several studies and trials of cash withdrawal from ATM machines using QR code technology, and the results have been generally positive. Here are some of the key findings from these studies:

- **Convenience:** One of the main benefits of using QR code technology for cash withdrawals from ATM machines is convenience. Several studies have shown that customers find it easier and more convenient to use QR codes for cash withdrawals, as they do not need to carry physical cards and can use their smartphones instead.
- **Security:** Another benefit of QR code technology is enhanced security. Studies have shown that QR codes are more secure than physical cards, as they are harder to clone or skim. However, some studies have also highlighted the need for additional security measures, such as two-factor authentication, to ensure the safety of QR code transactions.
- **Speed:** Cash withdrawals using QR code technology are generally faster than traditional ATM transactions, which can reduce waiting times and improve customer satisfaction.
- **Cost Savings:** Using QR code technology for cash withdrawals from ATM machines can result in cost savings for banks and financial institutions. This is because they can reduce the costs associated with issuing physical cards and managing ATM networks.
- **User Acceptance:** Studies have shown that customers are generally willing to adopt QR code technology for cash withdrawals from ATM machines, as long as they are aware of its benefits and have access to the necessary tools and training.

VIII. CONCLUSION

Many financial institutions offer cardless ATMs to improve customers' experience by eliminating the need to carry and replace cards, which can easily be lost or compromised, as well as to reduce the cost to the institution to replace them. However, the current cardless ATM withdrawal systems are vulnerable to several attacks. This paper describes and simulates the adversarial models for the possible attacks, such as shoulder surfing and relay.

Moreover, this paper proposes a mutual authentication scheme by using location factor, which is a modified model to solve those possible problems. For this proposed system, customers still perform the same process and get the same transaction facilities for withdrawal transactions as presently exist. In addition, this paper analyses and discusses the security and usability of the proposed scheme, comparing it with other systems.

**REFERENCES**

- [1] F. Zhang, A. Kondoro, S. Muftic, Location-based authentication and authorization using smart phones, IEEE International, Conference on Trust Security and Privacy in Computing and Communications 2012, Liverpool UK. 25 – 27 June 2012, 1285 – 1292.
- [2] F. Aloul, S. Zahidi, W. El-Hajj, Two factor authentication using mobile phones, IEEE/ACS International Conference on Computer Systems and Applications 2009, Rabat Morocco. 10 – 13 May 2009, 641 – 644.
- [3] J. Kim, G. Sharma, I.S. Cardenas, D.Y. Kim, N. Prabakar, S. S. Iyengar, Dynamic PIN: A novel approach towards secure ATM authentication, International Conference on Computational Science and Computational Intelligence 2017, Las Vegas USA. 14 – 16 December 2017, 68 – 73.
- [4] M.A. Imran, M.F. Mridha, M.K. Nur, OTP based cardless transaction using ATM, International Conference on Robotics, Electrical and Signal Processing Techniques 2019, Dhaka Bangladesh. 10 – 12 January 2019, 511 – 516.
- [5] Cardless Withdrawal, at <http://scb.co.th/th/personal-banking/digital-banking/scb-easy/howto/cardless.html>, 18 January 2021.