Secured Transaction by Universal Card and Smart Security

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***Abstract*-The design, implementation and employment of secure payment system in ATM by using radio frequency identification technology. If your card is lost you need not to worry until replacement of card which will take minimum of few days, until then it is difficult to survive without ATM card and also when you need to give payment to another person who is staying away from us. So, the proposed model which uses the concept of universal card which uses the radio frequency identification technology. To initiate the process, the card is swiped. After that it will ask for the account number. On providing that it will generate a random unique code and SMS the same to the account holder. The Account holder has to share that unique code to the person who is using universal card. By this way we can have a secure mode of ATM transaction.**

An additional feature to the existing ATM machines is added which serves as a barrier to ATM theft, nowadays we are seeing an increased number of ATM theft in many places. In some cases, money is stolen by breaking the ATM and in other case ATM machine itself is stolen. To overcome this, When the robbery occurs, there will be some vibration, if these vibrations are above the threshold value then those vibrations are sensed by vibration sensors. Once the vibration is sensed the beep sound will occur from the buzzer. DC Motor is used for closing the door of ATM and the concerned authority is alerted using GSM.

I. INTRODUCTION

The Biometrics The Automated Teller Machine (ATM) was first commercially introduced in the 1960s. By 2018, there were over 3.45 million ATMs installed worldwide. An automated teller machine (ATM) is an electronic telecommunications device that enables customers of financial institutions to perform financial transactions, such as cash withdrawals, deposits, transfer funds, or obtaining account information, at any time and without the need for direct interaction with bank staff. The introduction of the ATM proved to be an important technological development that enabled financial institutions to provide services to their customers in a 24X7 environment. The ATM has enhanced the convenience of customers by enabling them to access their cash wherever required from the nearest ATM. On most modern ATMs, customers are identified by inserting a ATM card or some other acceptable payment card into the ATM, with authentication being by the customer entering a personal identification number (PIN) which must match the PIN stored in the chip on the card or in the issuing financial institution's database.

The currently employed ATM cards are magnetic strip cards. A magnetic strips card is a type of card capable of storing data by modifying the magnetism of tiny iron-based magnetic particles on a band of magnetic material on the card. It can only be accessed by the account holders, but the proposed model allows to have transactions for the people without bank accounts, but it is mandatory to have a bank account for a person who wish to share his money. The information on the payment cards is user specific whereas the information on the universal card is universal. The design and implementation of the proposed model is based on the ATM which uses the radio frequency identification technology. The universal card reader is a part of ATM machine that identifies a unique code on the universal card. To understand the account information of the user, the data from the card is passed on to the host processor. Further on providing the required information, a random unique code is generated and Sent to the account holder. He has to share this unique code to the person who is using universal card. By this way we can have a secure mode of ATM transaction.

Financial institutions have implemented many strategies to upgrade the security at their ATMs and reduce scope for fraud. These include choosing a safe location for installing the ATM, installation of surveillance video cameras, remote monitoring, anti-card skimming solutions, and increasing consumer awareness by informing them of various methods of safeguarding their personal information while transacting at the ATM or on the Internet.

II. LITERATURE SURVEY

Saad Rehman, Aqib Perwaiz “RFID Technology: Beyond Cash-Based Methods in Vending Machine” [2017]. This paper characterizes the design, implementation and employment of cashless and secure payment system in vending machine by using radio frequency identification technology, to improve the traditional cash-based payment system that involved lot of problems and risks i.e., hacking, auditing, storing, currency and material of coins and notes. RFID is achieving momentum in a multiple sector like retail, security, transportation, pharmaceuticals, defence, healthcare etc., and a host of other fields, and now vending machines.

Sambarta Ray, Souvik Das “An intelligent vision system for monitoring security and surveillance of ATM” [2015]. This paper presents an automated system to increase the security and surveillance of ATM. Due to the increase of robbery in ATM kiosks, it is important to employ an automated surveillance system to protect and secure the ATM machine from threats. Currently, a camera attached with the ATM

unit, records and transmits the video feed to the main server of the bank. Around the clock, this manual surveillance utilizes a lot of bandwidth for transmission. There is waste of memory and late response to emergency situation. Consequently, early detection of the situation is necessary to take preventive measures against an ongoing burglary.

Sivakumar, Gajjala Askok "Design and Implementation of Security Based ATM theft Monitoring system" [2013].This system uses ARM controller based embedded system to process real time data collected using the vibration sensor. Once the vibration is sensed the beep sound will occur from the buzzer. DC Motor is used for closing the door of ATM. Stepper motor is used to leak the gas inside the ATM to bring the thief into unconscious stage. Camera is always in processing and sending video continuous to the PC and it will be saved in computer. RTC used to capture the robber occur time and send the robbery occur time with the message to the nearby police station and corresponding bank through the GSM. Hear LCD display board using showing the output of the message continuously. This will prevent the robbery and the person involving in robbery can be easily caught.

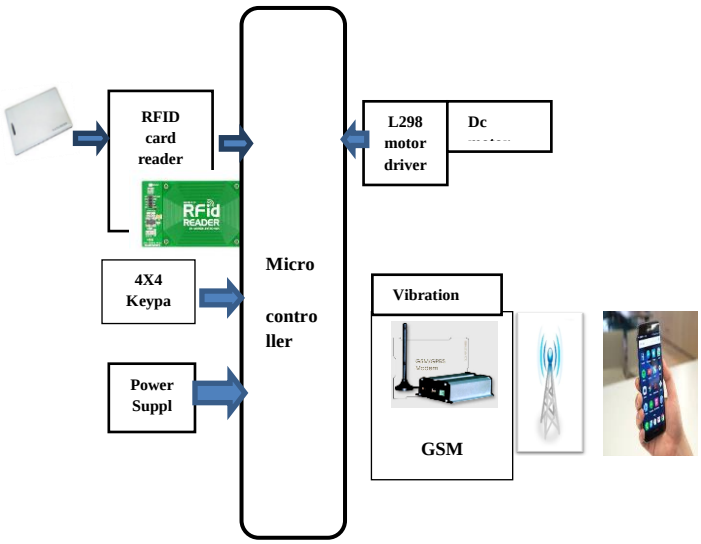
Moses Okechukwu, Onyesolu "ATM Security Using Fingerprint Biometric Identifier" [2012]. The growth in electronic transactions has resulted in a greater demand for fast and accurate user identification and authentication. Access codes for buildings, banks accounts and computer systems often use personal identification numbers (PIN's) for identification and security clearances. Conventional method of identification based on possession of ID cards or exclusive knowledge like a social security number or a password are not all together reliable. An embedded fingerprint biometric authentication scheme for automated teller machine (ATM) banking systems

III. METHODOLOGY

Universal card is incorporated with RFID technology. RFID is a Radio Frequency Identification Technique which involves the use of radio waves to read and capture the information stored on the card. RFID reader and RFID tags are two important parts of RFID system. RFID reader continuously sends radio waves of a particular frequency. If the card, on which this RFID tag is attached is within the range of this radio waves then it sends the feedback signals back to this RFID reader. This is the initial step of the proposed model. The RFID tag used here is passive one, means it do not have any power supply. These type of cards will depend on the power of radio waves to send the feedback signals. After swiping the universal card, the person who is present at the ATM needs to enter the account number of cash holder, which is displayed on the 16x2 LCD (Liquid Crystal Display) through the 4x4 keypad. A unique code/OTP (One Time Password)to an entered account number is generated and sent the same code to the account holder mobile which is linked with the account number through the GSM (Global System for Mobile Communication) module. Account holder has to share the same OTP to the person who is using universal card. After entering the OTP, the next step is to enter the required amount. The entered amount can be authorizedby an account holder and has the power to accept or decline the transaction.For the authentication and security identification a biometric device is used at the ATM which will display the information of the user.

Additional feature to the proposed model. Nowadays there is increased number of ATM theft, to overcome this, GSM technology is used to alert the concerned authority. When the robbery occurs, there will be some vibration, if these vibrations are above the threshold value then those vibrations are sensed by vibration sensors.Once the vibration is sensed the beep sound will occur from the buzzer. These beep sound indicate the microcontroller to rotate DC Motor through L298 dual motor device and these rotations are used to close the door of ATM center.

Block Diagram



IV. CONCLUSION

Secured transaction method is based on radio frequency identification technology. If your card is lost you need not to worry until replacement of card which will take minimum of few days, until then it is difficult to survive without ATM card and also when you need to give payment to another person who is staying away from us. So, the proposed model which uses the concept of universal card which uses the radio frequency identification technology.
An additional feature to the existing ATM machines is added which serves as a barrier to ATM theft

REFERENCES

[1] Saad Rehman, Aqib Perwaiz "RFID Technology: Beyond Cash-Based Methods in Vending Machine" [2017].
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