A SMART AND SECURE SINGLE ATM CARD FORMULTIPLE BANK ACCOUNTS

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ABSTRACT

Nowadays ATM services are more popular because their flexibility and ease of use for banking systems. Nowadays, banks are looking further ahead trade in how the customer is managed. Here we are developing an application in the banking sector, especially for debit/ATMs. User can create account and receive ATM card from the bank. The user can combine all his accounts in other banks into one card with a unique OTP number. The user uses a unique OTP number in the confirmation part. The user can select the bank required to make the transaction. User can integrate all banks to the accounts of other banks with one card with a unique PIN code. This number will be adjusted to the system in series with the GSM module. Radio frequency identifier [RFID] is enabled for the user bank ID. This proposed model will help the banking sector to become more efficient safety.

Keywords: ATM, ATMEGA 328, GSM, RFID

INTRODUCTION

Modern ATM's implement advanced security protection measures. They work in complex systems and networks to execute trades. Data processed at ATM's is usually encrypted, but hackers can use covert hacking devices to hack your account and withdraw funds from your account. Therefore, we have raised the bar by introducing additional security measures like OTP to avoid such fraudulent transactions and protect user confidentiality. The proposed method replaces magnetic stripe-based ATM cards with RFID-based cards with unique numbers. An Arduino MEGA micro controller is used to process the sensor data. OTP is used to authenticate users. Users can also register bank details and withdraw amounts from registered bank details. Therefore, this system offers multiple bank accounts with one ATM card, more secure. This document outlines how to consolidate users of multiple banks onto a single card, with the aim of providing key information for managing your bank's customers more effectively. It also meets customer expectations for information safety and security. We are developing an application for the banking sector, specifically the debit/ATM card sector. RFID cards can be used as smart ATM cards. RFID is considered an exciting and rapidly

growing technology. Improve multi-banking efficiency and facilitate transactions. An ATM is an automated teller machine, a computerized communication device that provides financial institution customers with access to public financial transactions without the need for a human clerk or bank teller. At ATM's, customers are identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip containing a unique card number and some security information. The first ATM was installed by Barclays Bank in en field Town, London on 27 June 1967. ATM's are known by various names such as Automated Transaction Machine, Automated Banking Machine, Cash Point (UK), Hole in the wall, Ban comet (Europe and Russia), and Any Time Money (India). Some people wrote their PIN s and passwords on a piece of paper or in a diary, which is completely insecure. It can be easily attacked and hacked by someone, so the account holder can be harmed. With the growth of the banking sector, everyone uses ATM's because they are located in various locations and customers can access their accounts anywhere and anytime. Customers with bank accounts can access their accounts through ATM systems by secretly receiving a PIN or password. Various biometric authentication technologies such as fingerprint, eye, retina, and iris have been developed as authentication methods for ATM's, but various issues need to be addressed to improve the security of ATM systems. OTP is a technology that helps make your data very secure by distinguishing all users based on their personal physical characteristics. A number of ATM cards and physical keys can be stolen, lost, duplicated, or misplaced. Tokens, such as passwords, can be shared, forgotten, hacked, or mistakenly observed by third parties. There are two important functions that biometric systems provide, identification and verification**.**

LITERATURE SURVEY

The easiest-to-use and most popular biometric approach that offers better protection at the touch of a button is fingerprint technology. Fingerprint identification devices are easy to install and require little time and effort to obtain a person's fingerprint. Fingerprint recognition is therefore considered one of the least intrusive among all biometric verification methods. Thousands of years ago, civil servants used thumbprints to seal documents, and law enforcement has been using fingerprint identification since the late 18th century. We have access to the same technology online. Fingerprint images are captured first, but no system storage is provided for photos. Instead, the fingerprint is converted into a template that cannot recreate the original fingerprint. Therefore, misuse of the system is not possible. Desktop applications called fingerprint-based ATMs use the user's fingerprint for authentication. Each person's fingerprint has unique details that allow it to uniquely identify a user. A better and

more secure alternative to using an ATM card is a fingerprint-based ATM. No need to keep your ATM card in your wallet and worry about losing your ATM card. Simply use your fingerprint to complete banking transactions. This section describes research using GSM, MEMS sensors, and IoT devices to monitor his ATM security and track down unauthorized users.

(a) The model discussed by Venka Reddy Maram, Mirza Sajid Ali Baig and Narsappa Reddy is an advanced security management system for ATMs using GSM and MEMS. A MEMS sensor detects motion indicative of theft and sends a message via GSM, requesting the microcontroller to automatically lock the door with the help of a DC motor. A buzzer sounds to alert security. A switch outside the room unlocks the door.

(b) Moturi Phalguna Satishi and Bala Kishore's model, the development of bank security systems using GSM and IOT, is studied in detail. Here, if the ATM breaks down, the data is sent via IoT and the door is automatically closed. Next, a buzzer alerts the neighborhood. At the same time, all the data will be uploaded to his website via his IoT and a warning message will be displayed to the concerned parties.

(c) His three phases of advanced ATM security systems were discussed by author Aman Kumar1). palm scan, 2). Retinal scan, 3). When the gas of abuse is released, the person loses consciousness. When executed, the transaction gate is closed. Phase wall consists of strong fibers that cannot be cut by any gas. If you want to go outside you have to press the button linked to the gate and it will open. Gases can energize the unconscious in the final stages. Also, a nearby police station monitors all surveillance cameras

(d) A project by Sudhakar Hallur, Manjunath Bajantri, and Sagar Santaji demonstrated his ATM security using GSM technology, giving each user a special card and number so that they could conduct transactions privately. increase. This section describes provisions for providing physical security for machines.

(e) Works of Shinde S.P., Chingale R.R., Dhane D.C. and Father P.B. Explore the use of GSM and MEMS sensors in ATM security sensors. This buzzer detects the movement and vibration of the machine with a vibration / MEMS sensor and sounds the buzzer. The door closes with a DC motor. Smoke detectors are used here to detect gas or smoke near ATMs.

Luther George Simjian built an early, ineffective ATM prototype in the late 1930s. He has applied for a related patent. His original plan was to build a perforated machine. This allows customers to make financial transactions without going to the bank. John Shepherd Barron came up with the idea for his 24-hour ATM in the 1960s. He was in charge of activities for De

La Rue Instruments. De La Rue now manufactures ATMs. Once the ATM is built, it will incorporate the De La Rue ATM. If Shepherd Barron claims to have invented his ATM, his ATM, the world's first, was located outside North London. James Good Fellow acquires Designated Development Engineer at Smith Industries. Safe physical accommodation must be provided by Chubb Lock and Safe Co. John D. In August 1973, White built his first ATM at what was then Chemical's Bank in Rockville Center on Long's Island. His patent application, filed July 29, 1970, was granted May 9, 1973 and assigned to Docutel Corporation. It was a credit card automated teller machine. Finally, in 1967, the first automated teller machine

(ATM) was issued to continuously dispense banknotes. Today's regulations require you to carry many debit cards while traveling. You must also carry your voter ID, passport and ration card when traveling. Accounts are always accessed with a numeric password. Bank customers can withdraw money electronically from automated teller machines (ATMs). The customer can then enter their passcode or personal identification number to verify their identity.

EXISTING METHOD

A user authenticates herself at her latest ATM by inserting a plastic chip card containing a card identification number (CIN) and other data. The four-digit personal identification number (PIN) that customers use to access ATMs and complete transactions serves as the primary authentication for ATM transactions.

DRAW BACKS OF EXISTING METHODS:

These are the following draw backs of Existing method

• As the number of bank accounts increases, the user must carry multiple her ATM cards and remember the password for each card.

• Fees if you use another bank's ATM after completing a transaction, you will be charged a separate fee.

• No one-time password (OTP) method.

PROPOSED METHOD

This built-in smart ATM card allows users to manage multiple accounts with one card instead of requiring a different card for each bank account. In this scenario, when the user swipes the smart card to the ATM, the server requests the OTP. Selecting a bank sends a network request to that bank and connects the server to the user's database. be able to complete the transaction.

ADVANTAGES OF THE PROPOSED METHOD:

The following are the advantages of Proposed method

• User can make all bank account transactions using her one her ATM card.

• Strengthen security measures

• Send a new password every time to your registered mobile number.

• Easier to use than the current system.

BLOCK DIAGRAM OF PROPOSED METHOD

The Following figure 1.3 shows the block diagram of proposed method
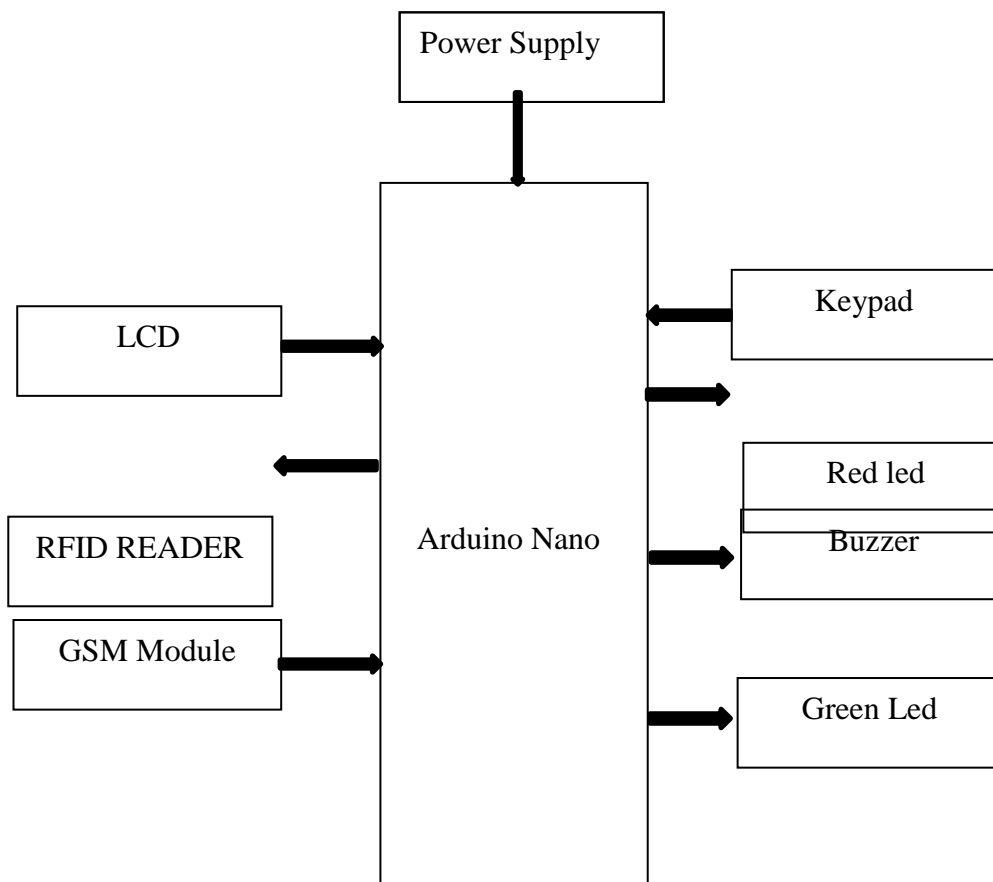

Fig. 1.3 Block Diagram

This project is designed to access multiple accounts using a single card. A convenient and easy-to-use system. The system uses OTP authentication to enhance security. When the user swipes ATM card on the RFID reader the LCD displays the number of bank accounts on registered mobile number and to run the various banking applications from the user's various accounts. If the password recognized as correct then the green LED will on and the OTP will be sent to the registered mobile number through GSM modem. In case of wrong OTP or invalid ATM card, the buzzer will sound and the red LED will be on.

SCHEMATIC DIAGRAM

The following figure 5.1 shows the complete description of proposed block diagram.
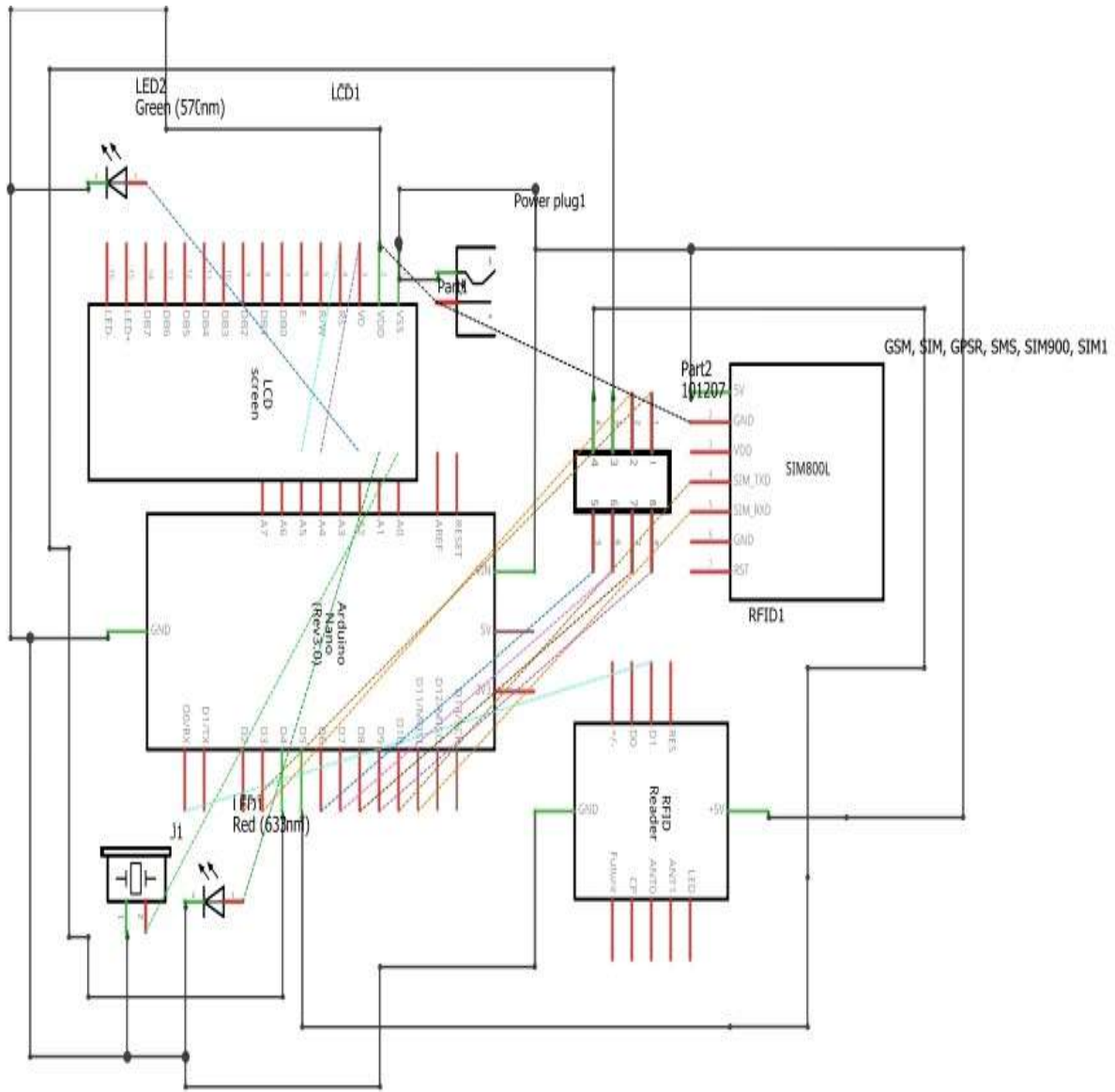
Fig:5.1 Schematic Diagram

The above figure shows the schematic diagram of proposed method. Here the hex keypad is connected to the digital pins of Arduino Nano (i.e., D4 – D11) and the RFID reader transmitter pin is connected to Arduino receiver pin and the pins of GSM i.e., pin transmitter is connected to receiver of Arduino Nano and receiver pin of GSM is connected to transmitter pin of Arduino Nano. The LCD pins SDA and SCL pins are connected to the A4, A5 pins of Arduino Nano.

UGC CARE Group-1,   2005

Project Manual Outlook

Complete Manual Outlook

Here's an overview of our project kit. Here we are using LCD, keypad, GSM, RIFD reader, Arduino Nano, 5V power supply, green and red LED, buzzer and the most important is ATM card i.e. RFID tag.

When you power the kit's LCD, it turns on and displays as Smart ATM card with OTP.

When the user to Swipe an ATM card, the LCD Displays user details such as name and age on

the LCD

After a while, the user will be asked to select a bank account.

After a while, it Shows the number of bank accounts on the registered mobile number

Once user have selected a bank account, the bank name and account number will be displayed

on the LCD screen

After selecting the bank account, GSM generates an OTP and transmits to the corresponding

mobile number

If the user enters an invalid OTP, the process will be rejected and the lcd displays as wrong OTP and the buzzer starts blown and red led gets glown.

If the OTP entered is correct, the green led gets glown and lcd shows the transaction is successful.

When the user swipes the unauthorized ATM card the access gets denied, the buzzer gets blow and red led gets glown.

CONCLUSION:

Users can manage many accounts of different banks in this project with one smart card ATM. This simplifies the management of multiple ATM cards and their associated passwords.

In this project, OTP provides a more practical means of user identification while maintaining a sufficiently high level of ATM system security. Security elements have been significantly upgraded to make owner identification more stable and reliable. The whole system is based on embedded system technology, so it is safe, reliable and easy to use. As a result, the likelihood of fraud at ATMs will decrease in the future.

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