



INTEGRATIVE SINGLE CARD PAYMENT SYSTEM USING AADHAAR CARD – ONE CARD FOR MULTIPURPOSE

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Abstract -The utilization of online services especially the access to internet banking services has grown rapidly from last few years. The internet Banking services provide the customers with secure and reliable environment to deal with. But with the technology advancement, it is mandatory for the banks to put in some best security strategies and procedures to authorize or validate the originality of the customers. This innovation is made in such a way that as soon as a transaction is made an electronic receipt is sent to the user's registered mobile number. The received receipts can be viewed in an orderly manner using the android app which we create. This app serves to be so useful to the user that they can easily manage bills and receipts. This paper deals with transaction, payment and ATM cash handling techniques with security. All transactions are done through single card (Aadhaar card) number which is interlinking all accounts with more security. This can analyze user behavior using Aadhaar card since all the transactions take place under one card

keywords – Aadhaar card, payment ,transactions

A. Introduction

Progression in installment advances has an extraordinary effect in one's personal satisfaction. Numerous developing installment advancements make the two openings and difficulties for the developing populace. Throughput being the principle parameter this advantageous contactless installment process picked up energy, among individuals of all class. In spite of the fact that the advanced installment process has been operational since the 1960's, the advancement of this technology and e-commerce evolution had become main stream in recent years [1]. The "3e model", similar to the model of N.Ashokan, included credit card, E-cash and models of E-check payment [2]; however credit

card is most utilized payment method amidst of all the other means of transaction [3]. There are faster money transfers by utilizing the concept of P2P (peer to peer) with the help of mobile wallets and mobile banking, which includes bill payment, transfer of money and taking money from ATM, advanced booking, mobile Top-ups, and money transfers with the help of P2P [4]. Mobile banking service had its inception in 1977 which was introduced by Merita Bank through SMS [5]. It was observed that people were able to do lightening fast banking transactions. It is pertinent to note that out of 50% people using mobile, 2/3rd of the population have online bank facilities [6]. There is also contact between two cards by NFC technologies which sends the payment between the two parties. The security provided by magnetic transmission aids the users the leverage to connect their devices to POS terminals. By doing which only old-school credit and debit cards are identified rather than NFCs[7],[8]. Paying through android systems were introduced in late 2015. It is predicted that by the year 2020, about 60-65% of merchant's transaction will take place using payments on gadgets [9]. We also introduce an application on the android market which is used to monitor the user's entire transaction details. In this card we integrate each and every account of the user so that one card can be used for multipurpose.

B. Existing system

Only cash or card or online based payment system available so far, there is no peer to peer card based payment available.

C. Proposed system

In the "proposed system" a peer to peer connection is established between both the transmitter and receiver for cashless transaction. Finger print of the receiver

should be verified and a token is generated to the transmitter part. Only after successful transaction amount is transferred to the receiver.

D. Block diagram

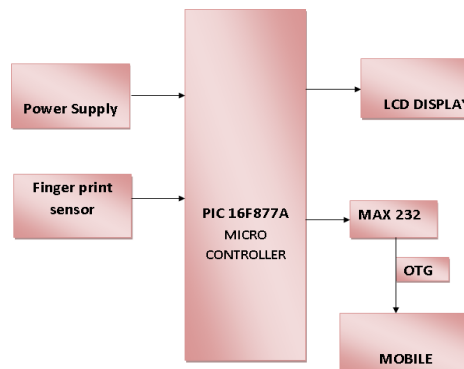


Figure-I block diagram of hardware

(I) PIC Microcontroller's specification

This Peripheral interface controller is considered as the most renowned microcontroller in the electronics industry. Hence the coding in this micro controller makes it more convenient to use. The major advantage of this micro controller is that it uses the flash memory and it can be write and erase as many times. It consists of 35 simple word instructions, operating speed of the clock input is 200mhz, voltage is up to 5.5v, RAM is 368 bytes, data EEPROM is 256 bytes, Flash memory is 14kb. PIC has 5 types of ports; Port A&E for A/D conversion, Port B is for interrupts, Port C for serial communication and Port D for parallel communication.

(II) Finger print sensor

The user has to register his finger prints twice. Meanwhile a process takes place in the system which will run the images of finger prints and produce fingerprint template and saves it. When identical finger prints are found, the user's fingerprint which was entered will be cross checked with the templates of the fingerprint in the library. So, the system will distinguish the

live fingerprint with appropriate template saved in the module.

For multiple match, the system will run through the entire fingerprint library for identical fingerprint. At all instances, the system will display the matching result as either access granted or access denied.

(III) RFID Tag

Identification of objects are done rapidly and reliable outputs are attained with the help of Automatic Identification and Data Capture (AIDC) technologies. Two main components are present they are, (a) the tag (transponder) which is fixed to the object and (b) RFID reader (interrogator) which emits and accepts signals. There are two different types in RFID tags they are –

Active Tag -contain an internal power source longer read-range, no line of sight required accuracy, reliability and superior performance

Passive Tag- no internal power supply receives power from the reader should be in line of sight minimum coverage range

Chip less- RFID tag structure which is well known Hi-end structured tag is reported in [10], which reads without the aid of optimization algorithm or polarization independence but the QR-Code generated aids in reading by optical and electromagnetic means. There is requirement of new design outcomes in this field as it is complicated to analyze complex geometrics.

(IV) LCD Display

Wide range of applications is found in electronic display module called LCD. A 16x2 LCD explains that it can produce 16 characters per line and there are 2 lines of 16 characters. A 16x2 LCD display is very central module and is very frequently used in different devices and circuits. In this LCD each character is displayed in 5x7 pixel matrix. Command and Data are two registers of LCD.

E. Money withdrawal based on QR-Code

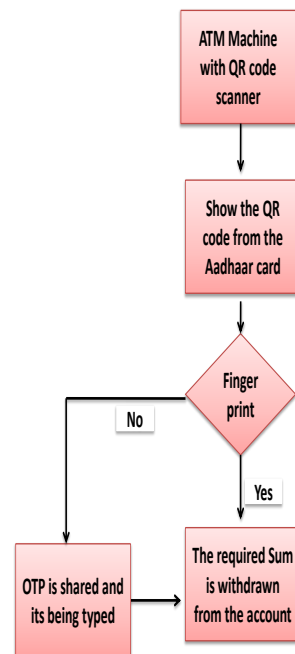


Figure-II flow chart for QR based money withdrawal

We will have a QR scanner attached to the ATM machine which will scan the user's Aadhaar Card. After scanning, the user may proceed with two options (i.e) access with fingerprint or access without fingerprint. This feature is inserted to distinguish authorized user and others. The authorized user may proceed by scanning his fingerprint to the sensor. If not the user will be asked to submit the OTP which will be sent to his mobile to continue without

fingerprint. Thereafter the user can withdraw money from his account.

F. Working Module

Firstly the new user is registered by giving his/her appropriate details. After registering the finger print of the user is kept for verification and it's verified. The kit is connected to the system and when the user

places his/her finger for verification the print is stored in the form of hex file format. PICmicrocontroller has five main ports they are

PORT	PINS	APPLICATIONS
PORT A	6	A/D conversion
PORT B	8	Interrupt
PORT C	8	Serial communication
PORT D	8	Parallel communication
PORT E	3	A/D conversion

Table- I Types of ports

Once all the process is done then a picture of the user is taken and uploaded into the console. Then the bank details of the user is fed into the system. Once the details are saved a QR code is generated for the user, which is used for transaction processes. The QR code is stored in the server and a mail is sent to the corresponding user as well. This is just an overview of our project. Here we used Netbeans IDE 8.2 software for creating our modules. We have used 10 modules for creating our database. The details of the user are stored in MySQL software. We are using Hi-Tech C Compiler. After all this registering process is done the user can use the Aadhaar card number or the generated QR code to withdraw money from the ATM and once he/she withdraws money the remaining balance is updated in the server which can be monitored by the user using the app which we created using Android studio.

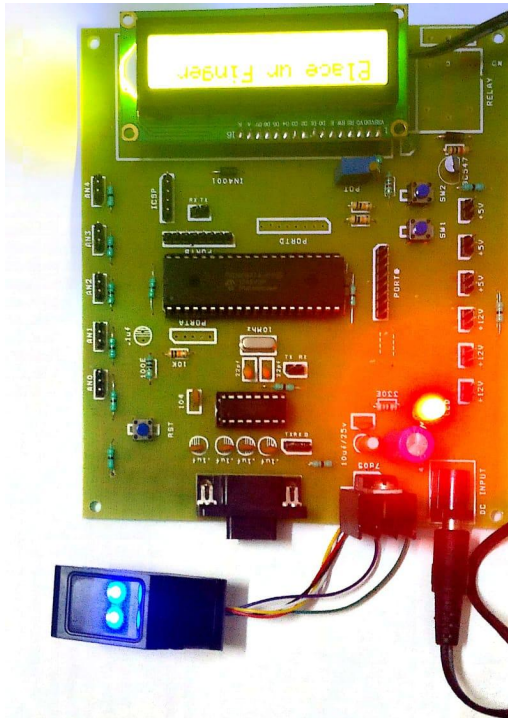


Figure – III , Working module

G. Conclusion

In this paper, a new android application has been created to provide authenticity of the user and also to easily manage bills and receipts. This paper also deals with transactions , payment and ATM cash handling techniques with security. All transactions are done through single card (Aadhaar Card) number that has been interlinked with all accounts which provides more security.

H. Reference

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