An Innovative and Effective Usage of New Generation ATM with QR Scanner and Biometrics Technology

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ABSTRACT

The ATM (Automated Teller Machine) System is the project which is used to access their bank accounts in order to make cash withdrawals. Whenever the user needs to make cash withdraws, they can enter their PIN number (personal identification number) and necessary details has to be entered and it will display the amount to be withdrawn in the form of 100's 500's and 2000's. Once their withdrawn was successful, the amount will be debited in their account. This is the usual procedure of cash withdrawal. It requires more and more time. So, in order to reduce that inconvenience, we introduce this proposed concept for the ATM (Automated Teller Machine) simply by showing Quick Response Code and Biometric to withdraw their money within 30 sec. This is more secure when compared to usual procedure.

Keyword: - *QR (Quick Response), Biometric (finger print), PIN, Mobile, Android application.*

1.INTRODUCTION

In this concept we introduce a new technology for cash withdraw, in this method we use Quick Response code based android application, ATmega328p microcontroller, biometric sensor, relay, LCD display and DC motor. First, we need to select how much money you want to debit and other details like entering PIN, name, phone number etc., from your android application and generate it as a QR code and Show that QR code to the camera placed in the Nearby ATM, and that camera send the details to the ATM via Bluetooth and withdraw your cash easily within less than 30 sec and save your valuable time. This is more secure when compared to the existing system of ATM.

1.1 EXISTING SYSTEM:

The existing system of ATM (Automated Teller Machine) includes transactions via card and PIN based system. The usual procedure involves, swiping the card, choosing the language, choosing savings or current account, select for withdrawal or enquiry, entering the amount to be withdrawn, entering the PIN and then the amount will be withdrawn after all these long procedures. This requires more and more time. The main limitation in this existing

system is, the card can be stolen, PIN can be easily known by an unauthorized person, user have to carry ATM card anytime with them. Hence this system is less secure and requires more time.

1.2 PROPOSED SYSTEM:

The purpose of this project is to make ATM transactions more secure and less time consumption. Here we use Biometric technology and QR (Quick Response) code for the cash withdrawal. All the necessary details will be entered in the android application in our smart phone and QR code will be generated. This code will be scanned by the camera in the ATM and details will be sent to the machine via Bluetooth, then by placing our fingerprint user can withdraw their money. This overcomes the drawbacks of existing system.
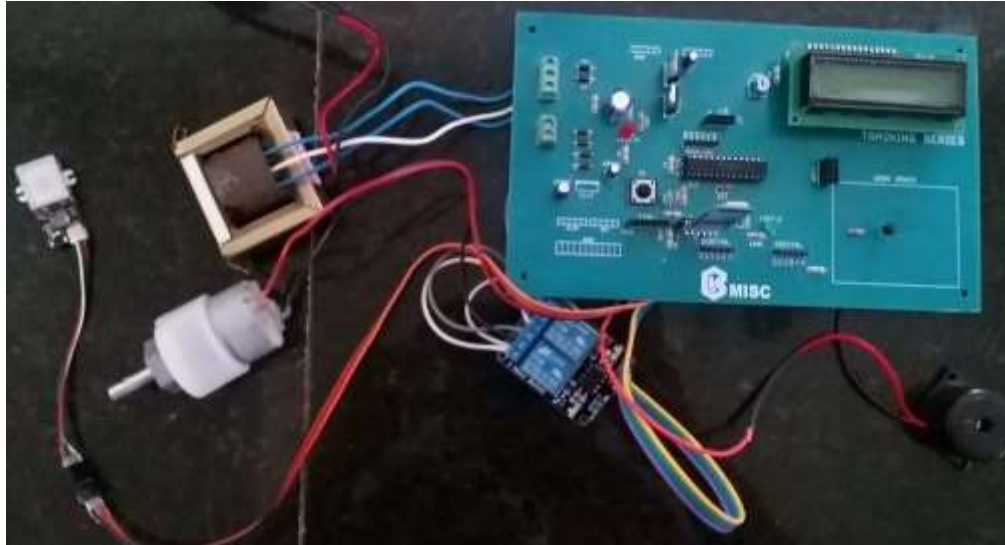
2. BLOCK DIAGRAM:
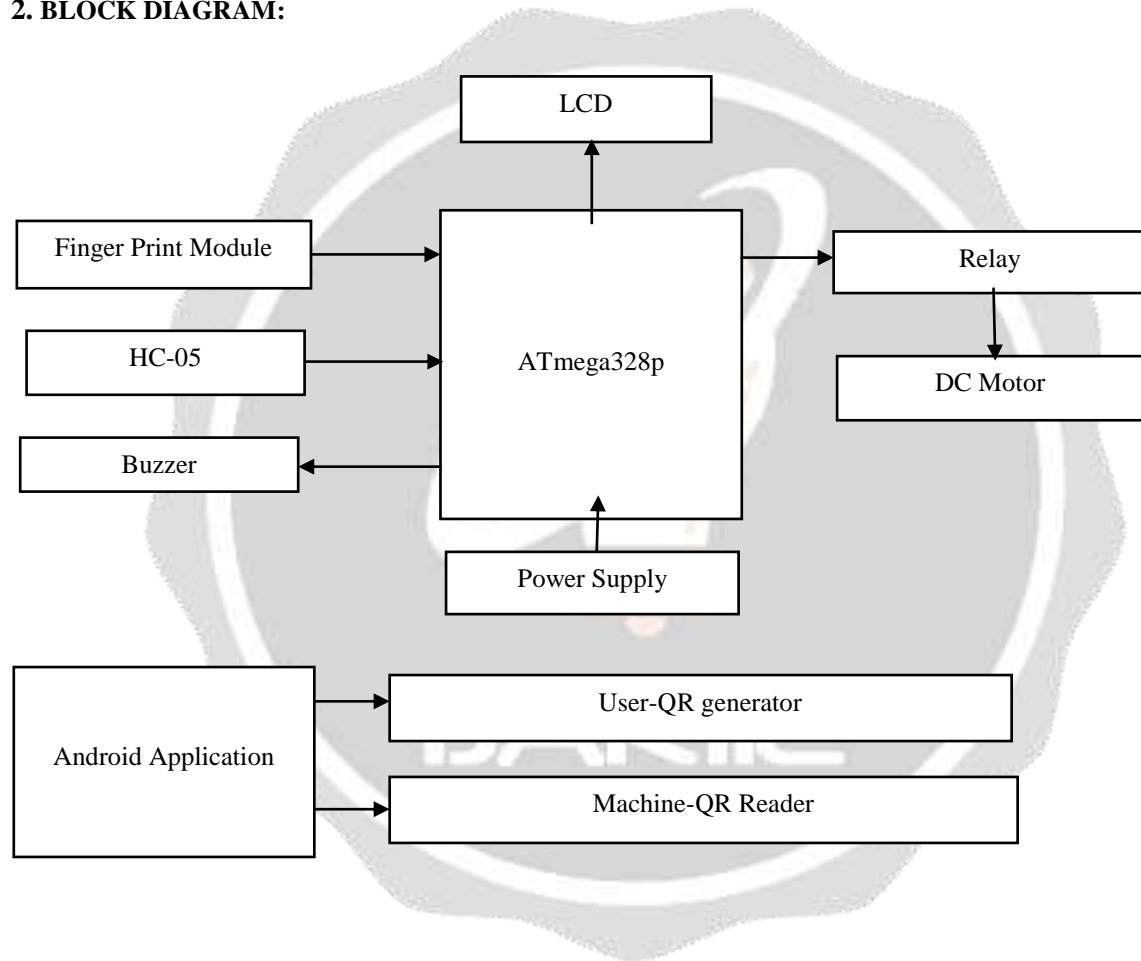
Fig -1

3. LITERATURE SURVEY:
3.1. RELATED WORK:

Authors	Title	Year	Description
Sivakumar.T, Sai venu.K	Design and Implementation of Security Based ATM theft monitoring system	2013	In case of robbery, beep sound will occur, doors will be closed automatically, gas will be leaked which brings thief to unconscious stage.
Jimoh R.G. and Babatunde A.N.	Short Message Service (SMS) verification	2014	Enhancing ATM by sending Short Message Service (SMS) to the user for verification.
Meenu Jacob and Nikhil Mathew	QR Based Card less ATM Transaction	2016	QR codes are generated in the wearable device as well as the ATM machine to carry out User authorization.
Poorana Chandran.S A.K.Gokul.	Security of ATM system using RFID and OTP.	2017	Amount withdrawal from ATM along with an OTP.
Madhuri More, Rupali Adhau	Card less Automatic Teller Machine and Biometric Security System Design using Human Fingerprint	2018	It improves the service of ATM cash withdrawal in less time with more level of security.

4. SYSTEM DESCRIPTION:

4.1 Generation of QR code:

For generating Quick Response (QR) code, develop the app using **android-studio-ide-181.5056338-windows**. This app is required for entering all the necessary details of the user.

4.2 Scanning QR:

For scanning the Quick Response (QR) code generated in the smart phone, develop the app using **MIT app invertor 2.**

4.3 Biometric:

For this system we use fingerprint module (GTM-5210F52) for user verification**.** This is the main key that makes the proposed system to be more secure.

4.4 Bluetooth module:

HC-05 is the Bluetooth module used here. This module is required for transferring the user information from the scanned device to the ATM system.

5. SYSTEM ALGORITHM & FLOWCHART:

5.1 ALGORITHM:

STEP 1: First register and login the user details using the app developed in smart phone.

STEP 2: Then enter amount to be withdrawn and the PIN number.

STEP 3: QR (Quick Response) code will be generated.

STEP 4: Now the generated QR code will be scanned by another device.

STEP 5: Verification of user details takes place.
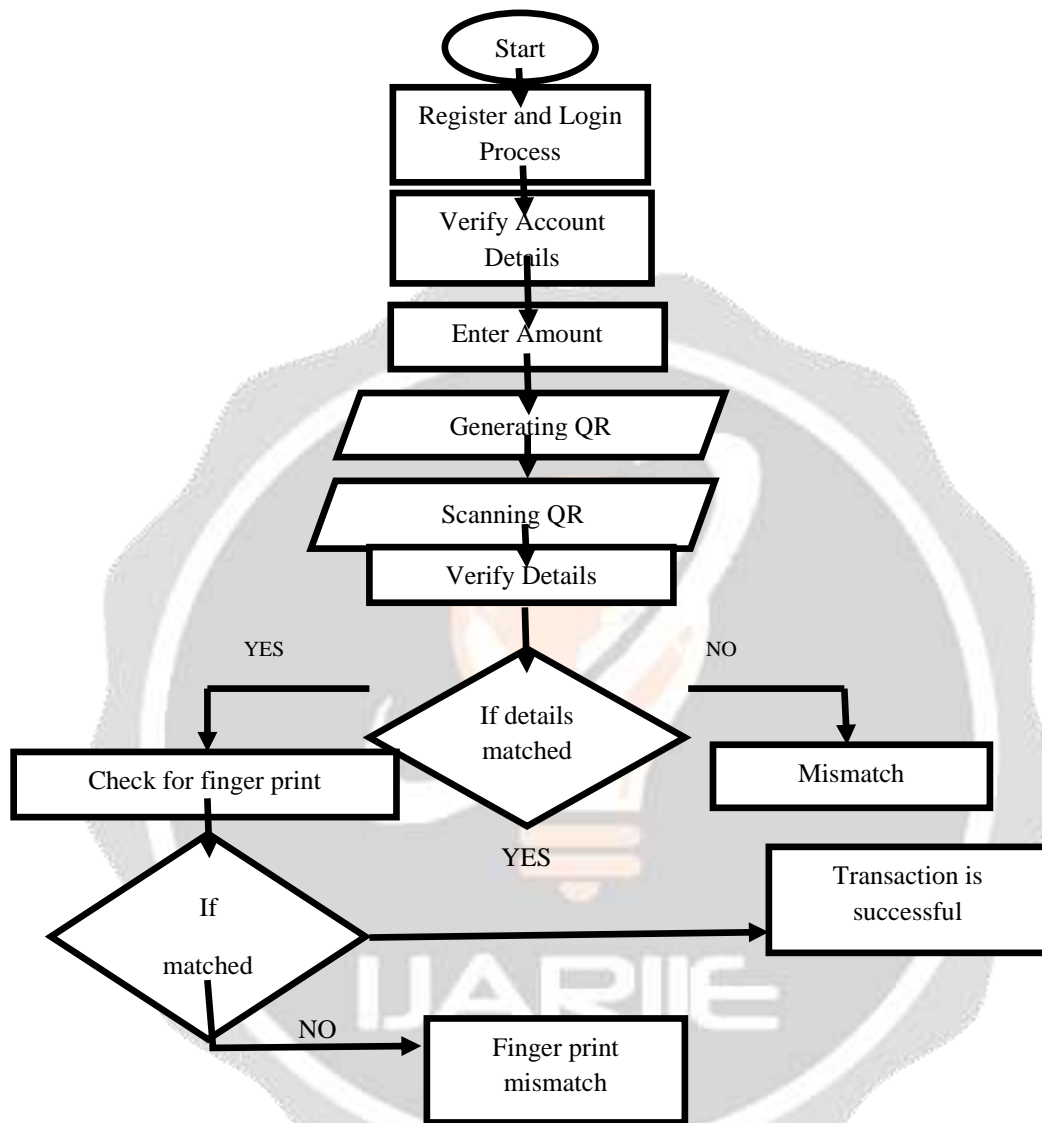
STEP 6: Check for finger print.

STEP 7: If matched go to Step 8 else go to Step 9.

STEP 8: Transaction is successful.

STEP 9: Finger print Mismatch.

STEP 10: Stop the process.

5.2 FLOWCHART:

4. CONCLUSION

The introduction of ATM system has become a useful system for everyone in the world where each and every individual was able to withdraw their money easily. However, theft in the ATM system like robbery of ATM card, PIN known by an unauthorized person etc., are arising nowadays which made the usual procedure of withdrawing money from ATM unsafe. Hence to overcome these limitations in the existing system, this new system is proposed. In this proposed system, we need to select how much money to be withdrawn from android app, it will generate QR code, this code has to be shown in the ATM and then the money can be withdrawn within less than 30secs. This saves user valuable time and more secure when compared to the existing system.

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