

SMART ATM SYSTEM USING DUAL SECURITY

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Abstract -The purpose of this paper is to reinforced security of the conventional ATM model .We have posited a new concept that enhances the overall experience, usability and convenience of the transaction at ATM. Feature like face recognition and One -Time Password (OTP) are used for the enhancement of security of account and privacy of users. Face recognition technology helps the machine to identify each and every user uniquely the making face as a key. This is completely elements the chance of fraud due to theft and duplicity of the ATM cards. Moreover the randomly generated OTP frees the user from remembering PINs as it itself acts as a PIN.

Key Words: Raspberry pi3, Keypad,DC Motor,RFID Reader,etc

1. INTRODUCTION

Due to rapid development in science and technology, upcoming innovations are being built-up with strong security. But on the other hand, threats are also being posed to destroy this security level. Though enhancement in automation has made a positive impact overall, but various financial instruction like banks and applications like ATMs are still subjected to thefts and frauds. The existing ATM model uses a card and a PIN which gives rise to increase in attacks in the form of stolen cards, or due to statistically assigned PINs duplicity of cards and various other threats. To overcome hybrid model which consist of conventional features along with additional features like face recognition and OTP IS used.

1.1 Literature survey

This paper "Face Recognition Technique: Enhanced Saftay Approach for ATM" Published by " Dipa Malvia" in " International Journal of Scientific and Research Publication" on " 12 december 2014" In This paper she has designed Security of ATM Using Face Recognition Technique.

This paper "Enhanced Security For ATM Machine With OTP And Facial Recognition Features" Published by "Mohsin Karovaliya, Saifali Karedia, Sharad Oza, DR.D.R.Kalbande" in "International Conference on Advanced Computing Technologies and Applications (ICACTA-2015)" on "2015" In this paper they have designed Security of ATM Using OTP and Facial recognition features. Using Above Two Reference Papers

We Have Designed a Strong ATM System Using Dual Security. The Dual Security Means Face Recognition And OTP Generated. In This Project We Are Using Raspberry Pi And Raspberry Pi Camera For Face Recognition.

1.2 Diagram Description

A database of peoples face is maintained by the system that handles face detection. When a face needs to be predictable a snap of the ones look is taken and evaluated to the appearance present in the database to observe if a match is found. There are typically 3 parts related to a face recognition system

1. Face detector
2. Eye localizer
3. Face recognizer the face detector

The face detector:

The face detector spot the face, eliminating any other detail, not related to the face. It Identifies the facial region and leaves the non-facial region in the photo of the person to be identified.

The eye-localizer:

It finds the spot of the eyes, so that the position of the face can be identified better.

The recognizer:

It will check the database to find a match.

OTP Working-

The idea to use mobile phones is preferred over e-mail because the people in rural areas have simple phones which can receive text messages but have no internet connections and e-mail facilities. Since mobile phones are ubiquitous, we intend to use mobile phones so that everyone can take the benefit of the new proposed system. The user will receive OTP immediately after passing the face recognition test. Once OTP is received user has to enter the code which is of 6-digit. User gets three chances to enter the code. If the code is entered incorrectly in three consecutive attempts account gets temporarily transaction

cancel and notification is sent to registered mobile number.

2. Diagram

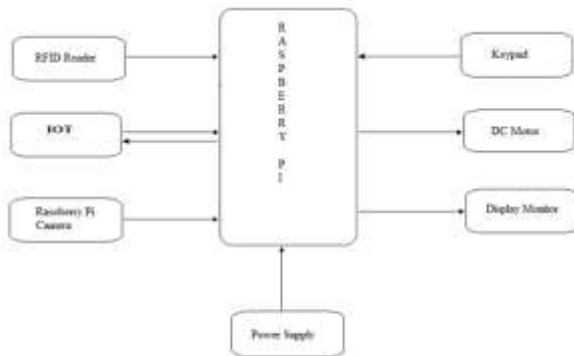


Fig 1: block diagram

2.1 Hardware Description

CGS, sc, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

Raspberry pi 3

The Raspberry Pi 3 Model B+ is the latest product in the Raspberry Pi 3 range, boasting a 64-bit quad core processor running at 1.4GHz, dual-band 2.4GHz and 5GHz wireless LAN, Bluetooth 4.2/BLE, faster Ethernet, and PoE capability via a separate PoE HAT. The dual-band wireless LAN comes with modular compliance certification, allowing the board to be designed into end products with significantly reduced wireless LAN compliance testing, improving both cost and time to market. The Raspberry Pi 3 Model B+ maintains the same mechanical footprint as both the Raspberry Pi 2 Model B and the Raspberry Pi 3 Model B.

Raspberry pi Camera

It is a 8 megapixel native resolution sensor-capable of 3280 x 2464 pixel static images. Raspberry pi 3 Camera Supports 1080p30, 720p60 and 640x480p90 video Camera is supported in the latest version of Raspbian, Raspberry Pi's preferred operating system. It can be used in CCTV security camera, motion detection, time lapse photography.

RFID Reader

The EM-18 RFID Reader module operating at 125kHz is an inexpensive solution for your RFID based application. The

Reader module comes with an on-chip antenna and can be powered up with a 5V power supply. Power-up the module and connect the transmit pin of the module to receive pin of your microcontroller. Show your card within the reading distance and the card number is thrown at the output. Optionally the module can be configured for also a weigand output.

Keypad

It is a Ultra-thin design and Adhesive backing. It is a excellent price/performance ratio. Keypad is easy interface to any microcontroller. Example programs provided for the BASIC. Stamp 2 and Propeller P8X32A microcontrollers.

Key Specifications

Maximum Rating: 24 VDC, 30 mA

Interface: 8-pin access to 4x4 matrix

Operating temperature: 32 to 122 °F(0 to 50°C)

Dimensions: Keypad, 2.7 x 3.0 in (6.9 x 7.6 cm)

Cable: 0.78 x 3.5 in (2.0 x 8.8 cm)

5. DC Motor

Electric motors are broadly classified into two different categories: DC (Direct Current) and AC (Alternating Current). Within these categories are numerous types, each offering unique abilities that suit them well for specific applications. In most cases, regardless of type, electric motors consist of a stator (stationary field) and a rotor (the rotating field or armature) and operate through the interaction of magnetic flux and electric current to produce rotational speed and torque. DC motors are distinguished by their ability to operate from direct current.

There are different kinds of D.C. motors, but they all work on the same principles. In this chapter, we will study their basic principle of operation and their characteristics. It's important to understand motor characteristics so we can choose the right one for our application requirement.

Power Supply

A Power supply is an electrical device that supplies electric power to and electrical load. the primary function of a power supply is to convert electric current from a source to the correct voltage, current and frequency to power the load .

Specification-

Efficiency of power conversion is better than 55%.

The amount of voltage and current it can supply to its load .The ripple and noise parameter are another important power supply

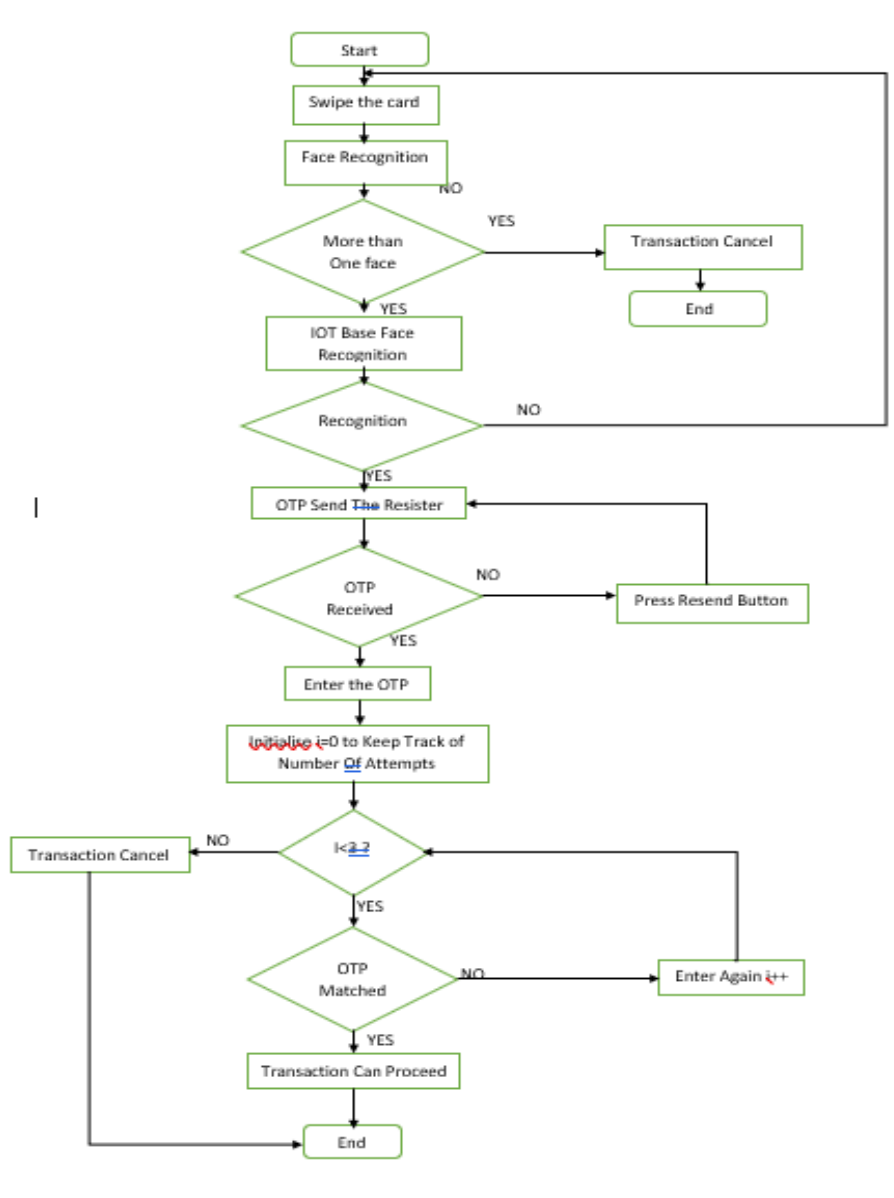
Specification.

When the current drawn from particular output increases or decreases, the voltage changes slightly as well, usually increasing as the current rises.

IOT

The internet of things, or IOT, is a system of interrelated computing device, mechanical and digital machine, object, animal of people that are provided with unique identifiers

Flow chart



(UIDS) and the ability to transfer data over a network without requiring human-to-human to computer interaction.

3. Software requirements

Dip Trace

It is an EDA or CAD software for creating schematic diagrams and printed circuit board. The developers provide a multi-lingual interface and tutorial (currently available in English and 21other languages).Dip-Trace has 4 modules; schematic capture editor, PCB layout editor with built-in-shape-based auto router and 3D preview & export, component editor, and pattern editor.

Conclusion

The purpose of this paper is to reinforced security of the conventional ATM model .We have posited a new concept that enhances the overall experience, usability and convenience of the transaction at ATM

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