

Advanced ATM Security System

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ABSTRACT

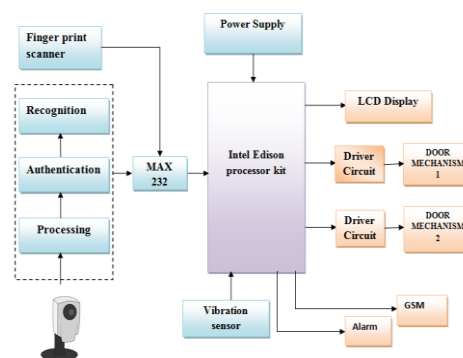
In order to improve people's comfort, safety it is very useful to monitor the ATM section. Now a day's mat lab technology will be increasing face authentication process. And embedded platform used to access the real time application. Here both will be done in a major thing. And also sensors are interface with controller. This is called brain of the embedded system. This everything used to present life style of the human.

I. INTRODUCTION

In my project I'm implementing various features like image processing, GSM, vibration sensor, door locking mechanism. The door of ATM opens only when the face of the person is completely recognized. In case, if the person covers his/her face and tries to enter, the door will not be opened. If the person breaks the camera and approaches the door and breaks the glass door, secondary steel door will operate. If the person tries to steal the amount by breaking the ATM machine, the vibration sensor operates and the anesthesia in the corner of the room spread in the room. At once the person inhales the anesthesia, he will faint. Simultaneously the information will be send to the nearby police station and as well as respective bank. Suppose if the person covers his face after entering into the room at time of anesthesia spreading, he will not be able to come out as the steel door will be locked. So the criminal cannot escape from the ATM center. There is chance of spreading of anesthesia, when the ATM machine vibrates due to any earthquake. In order to prevent it, we are using additional vibration sensor under the ATM machine at a certain distance. If both vibration sensors vibrates, the anesthesia will not Spread out. Once the person tries to steal the amount from ATM, he/she will be caught by the operation of any one of these features. Through this we can

Prevent ATM theft and the criminal can be easily caught red-handed.

II. DIAGRAM



III. DESCRIPTION

3.1. Power supply unit

The supply of 5V DC is given to the system which is converted from 230V AC supply. Firstly, the step down transformer will be used here for converting the 230V AC into 12V AC. The microcontroller will support only the DC supply, so the AC supply will be converted into DC using the bridge rectifier. The output of the rectifier will have ripples so we are using the 2200uf capacitor for filtering those ripples. The output from the filter is given to the 7805 voltage regulator which will convert the 12V DC into 5V DC. The output from the regulator will be filtered using the 1000uf capacitor, so the pure 5V DC is getting as the output from the power supply unit. Here we are using the PIC microcontroller which will be capable of getting the supply of 5V DC so we have to convert the 230V AC supply into 5V DC supply.

3.2 Fingerprint recognition

Fingerprint recognition or fingerprint authentication refers to the automated method of verifying a match between two human fingerprints. Fingerprints are one of many forms of biometrics used to identify individuals and verify their identity.

This article touches on two major classes of algorithms (minutia and pattern) and four sensor designs (optical, ultrasonic, passive capacitance, and active capacitance).

3.3 Shutter Locking System

RFID reader is placed on the outside of the shutter and is separate from the main controller unit. The controller receives serial data from the Reader and controls the shutter lock or unlock. When the card is brought near to the RFID module it reads the data in the card and displays on the LCD. The data in the card is compared with the data in the program memory and displays authorized or unauthorized Message. The door opens for a licensed person, closes for associate unauthorized person.

3.4. Buzzer

A **buzzer** or **beeper** is an audio signaling device,^[1] which may be mechanical, electromechanical, or piezoelectric. Typical uses of buzzers and beepers include alarm devices, timers and confirmation of user input such as a mouse click or keystroke.

3.5. Webcam

A **webcam** is a video camera that feeds its images in real time to a computer or computer network. Unlike an IP camera (which uses a direct connection using Ethernet or Wi-Fi), a webcam is generally connected by a USB cable, FireWire cable, or similar cable.

Their most popular use is the establishment of video links, permitting computers to act as videophones or videoconference stations. The common use as a video camera for the World Wide Web gave the webcam its name. Other popular uses include security surveillance, computer vision, video broadcasting, and for recording social videos.

3.6. Vibration sensor

This sensor buffers a piezoelectric transducer. As the transducer is displaced from the mechanical neutral axis, bending creates strain within the piezoelectric element and generates voltages. If the assembly is supported by its mounting point and left to vibrate in free space the device will behave as a form of vibration sensor. The sensing element should not be treated as a flexible switch, and is not intended to be bending. Sensor value 500 roughly corresponds to acceleration. Acceleration will deflect the sensing element up or down, causing Sensor value to swing either way. This sensor is not meant to measure precise acceleration and vibration use it to detect an acceleration impulse, or the presence of vibration.

3.7. CCS PIC-C compiler

The CCS PCW compiler is specially designed to meet the special needs of the PIC micro MCU controllers. These tools allow developers to quickly design application software for these controllers in a highly readable, high-level language. The compiler has some limitations when compared to a more traditional C compiler. The hardware limitations make many traditional C compilers ineffective. As an example of the limitations, the compilers will not permit pointers to constant arrays. This is due to the separate code/data segments in the PIC micro MCU hardware and the inability to treat ROM areas as data. On the other hand, the compilers have knowledge about the hardware limitations and do the work of deciding how to best implement your algorithms.

3.8. KEIL uvision4

This is the embedded C compiler which is compatible for the ARM microcontroller to compile the code. Keil Software makes C compilers, macro assemblers, real-time kernels, debuggers, simulators, integrated environments, and evaluation boards for the 8051, 251, ARM, and XC16x/C16x/ST10 microcontroller families.

IV. CONCLUSION

We thus develop an ATM model that is more reliable in providing security by using facial recognition software. By keeping the time elapsed in the verification process to a negligible amount we even try to maintain the efficiency of this ATM system to a greater degree. Biometrics as means of identifying and authenticating account owners at the Automated Teller Machines gives the needed and much anticipated solution to the problem of illegal transactions. In this paper, we have tried to proffer a solution to the much dreaded issue of fraudulent transactions through Automated Teller Machine by biometrics that can be made possible only when the account holder is physically present. Thus, it eliminates cases of illegal transactions at the ATM points without the knowledge of the authentic owner. Using a biometric feature for identification is strong and it is further fortified when another is used at authentication level.

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