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Fingerprint Door Unlock System

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Abstract: Human identification subject is very huge and has passed through speedy modifications with time. Any crucial and really reliable human identification method is fingerprint identity. Fingerprint is the handiest specific identification for an individual. Not simplest particular however it is efficient in addition to transportable. So this enables in identifying a person or in improving security of a device. Finger print of someone is study through a unique kind of sensor. Finger print sensor can be interfaced with a microcontroller. Via keypad we are able to upload new consumer and delete the existing consumer, additionally perceive the consumer via choosing corresponding option through keypad. In this project we use a fingerprint sensor to study ones identity to automatically function the door. For this, we use a microcontroller to allow the door opening or final if the matching between scanned information and the already present records is correct. Comparison is performed within the fingerprint module itself and its output is given to microcontroller. End result is displayed in a led show whether the person is granted access or not.

Keywords: Digital Signal, LBP, CSLBP, MLBP, Efficiency, Performance, Particular Capabilities, Unique Features

I. INTRODUCTION

Biometrics refers back to the automated identification of a living man or woman based totally on physiological or behavioral traits for authentication reason. Many of the existing biometric technology are the face popularity, Fingerprint popularity, iris reputation, voice recognition and Signature popularity. Biometric method requires the physical presence of the person to be recognized. This emphasizes its desire over the traditional approach of figuring out what you have which includes, using password, a smartcard and so on. Additionally, it doubtlessly prevents unauthorized admittance to get entry to control systems or fraudulent use of ATMs, Time Attendance structures, cellular telephones, clever cards, laptop computers, Workstations, cars and computer networks. Biometric recognition structures offer greater safety and convenience than traditional techniques of private popularity. This machine focuses on the use of fingerprints for door lock or unlock. The fingerprint software enables fingerprints of valid users to be enrolled in a database. Before any consumer can use the automobile, his/her Fingerprint photo is matched in opposition to the fingerprints inside the database while customers with no fit within the database are prevented from the access. A microcontroller stores the statistics equivalent of fingerprint of the grasp User. Access among this enrolled fingerprint and the fingerprint of the person that is ready to use the automobile is done by using the microcontroller. If both the fingerprints are identical control circuitry of the microcontroller sends suitable message to the LED. If the fingerprints aren't identical Microcontroller sends signals to alarm circuitry to warn about an unauthorised use.

II. PROBLEM STATEMENT

- Require contact of the finger with any acquisition surface.
- Require constrained and highly cooperative acquisition methods.
- Low usability, user acceptance and presence of distortions, less robust to dust and dirt, hygiene issue

III. PROPOSED METHODOLOGY

The core part of our project is the microcontroller PIC16F877. It has an oscillator frequency of 20 MHz .It has RISC architecture. A fingerprint sensor R303A is interfaced to the microcontroller .One motor is used for operating the door and it is meant for the engine part. LCD is interfaced for display. It helps to make troubleshooting easier. An LED gives a display and state the access is granted or denied.

IR diode is connected through a resistance to the dc supply. A photo diode is connected in reverse biased condition through a potential divider of a 10k variable resistance and 1k in series to the base of the transistor. While the IR rays fall on the reverse biased photo diode it conducts that causes a voltage at the base of the transistor. The transistor then works like a switch while the collector goes to ground. Once the IR rays are obstructed the driving voltage is not available to the transistor thus its collector goes high. This low to high logic can be used for the microcontroller input

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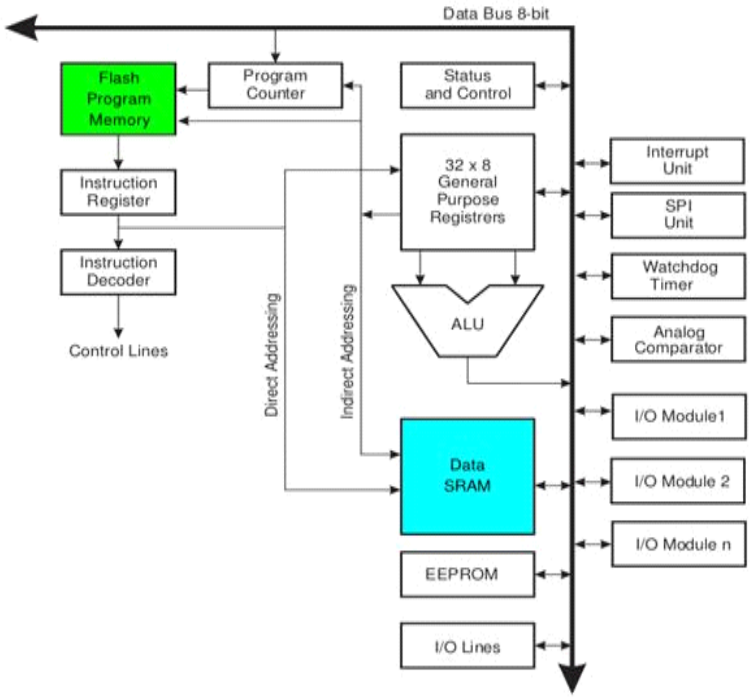
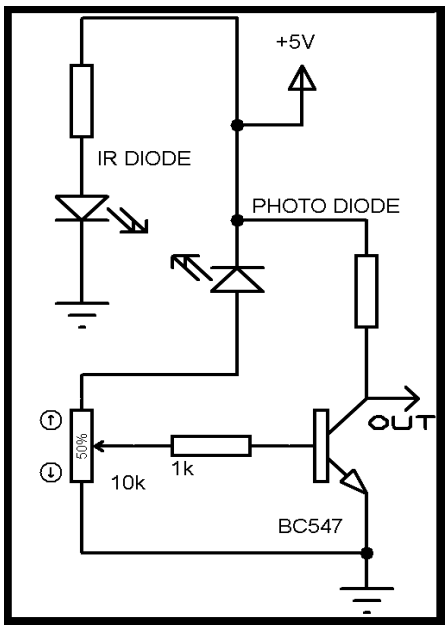
for any action as per the program





An Arduino is actually a microcontroller based kit which can be either used directly by purchasing from the vendor or can be made at home using the components, owing to its open source hardware feature. It is basically used in communications and in controlling or operating many devices. It was founded by Massimo Banzi and David Cuartielles in 2005. Arduino is an open-source platform used for building electronics projects. Arduino consists of both a physical programable circuit board (often referred to as a microcontroller) and a piece of software, or IDE (Integrated Development Environment) that runs on your computer, used to write and upload computer code to the physical board. The Arduino platform has become quite popular with people just starting out with electronics, and for good reason. Unlike most previous programmable circuit boards, the Arduino does not need a separate piece of hardware (called a programer) in order to load new code onto the board – you can simply use a USB cable. Additionally, the Arduino IDE uses a simplified version of C++, making it easier to learn to program. Finally, Arduino provides a standard form factor that breaks out the functions of the micro-controller into a more accessible package.

IV. ADVANTAGES

Security – security-wise, it is a vast improvement on passwords and identity cards. Fingerprints are much harder to fake, they also change very little over a lifetime, so the data remains current for much longer than photos and passwords.
Ease of use – for the user they are simple and easy to use. No more struggling to remember your last password or being locked out due to leaving your photo ID at home. Your fingerprints are always with you.
Non-transferable – fingerprints are non-transferrable, ruling out the sharing of passwords or 'clocking in' on behalf of another colleague. This allows for more accurate tracking of workforce and provides additional security against the theft of sensitive materials.
Accountability – using fingerprint recognition also provides a higher level of accountability at work. Biometric proof you have been present when a situation or incident has occurred is hard to refute and can be used as evidence if required.
Cost effective – from a technology management perspective, fingerprint recognition is now a cost-effective security solution. Small hand-held scanners are easy to set up and benefit from a high level of accuracy.

V. DISADAVANTAGES

System failures – scanners are subject to the same technical failures and limitations as all other electronic identification systems such as power outages, errors and environmental factors.
Cost – it is true that fingerprint recognition systems are more cost effective than ever, but for smaller organizations the cost of implementation and maintenance can still be a barrier to implementation. This disadvantage is lessening as devices become more cost effective and affordable.
Exclusions – while fingerprints remain relatively stable over a person's lifetime there are sections of the population that will be excluded from using the system. For example, older people with a history of manual work may struggle to register worn prints into a system or people who have suffered the loss of fingers or hands would be excluded.

VI. CONCLUSION

MLBP method of voice signal features extraction was proposed, and implemented. it was shown that this method is accurate and highly efficient. The generated voiceprint for each file is a unique and it can be used in a recognition system to identify the human and to identify a spoken words.

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