FINGERPRINT BASED AUTHENTICATION SYSTEM

ABSTRACT

According to ancient Greek scripts BIOMETRICS means study of life. Biometrics studies commonly include fingerprint, face, iris, voice, signature, and hand geometry recognition and verification. Many other modalities are in various stages of development and assessment. Among these available biometric traits, Fingerprint proves to be one of the best traits providing good mismatch ratio and also reliable. To provide perfect security and to make our work easier, we are taking the help of two different technologies viz. EMBEDDED SYSTEMS and BIOMETRICS.

Firstly discussing about Biometrics we are concentrating on Fingerprint scanning. For this, we are using FIM 3030N/other high voltage module as a scanner. This module has in-built ROM, DSP and RAM. In this, we can store the fingerprints of up to 100 users. This module can operate in 2 modes i.e., Master mode and User mode. We will be using Master mode to register the fingerprints which will be stored in the ROM present on the scanner with a unique id.

This application will be mostly used in organizations, banks etc. The persons who are the employees of that particular organization will be asked to scan their images for the first time they enter into the organization. After that, whenever the employee tries to enter into the organization, he has to scan his image to prove that he is an authorized person to the organization. Thus, the fingerprint module scans the image and sends it to the microcontroller. The microcontroller reads the image, compares the image with the already stored images in the database. If image match with database then it gives output pulse. Otherwise it gives beep sound and controller doesn’t give any output pulses for further action.
Here we use 8051 as a microcontroller with 5v DC Power supply. Serial (UART) protocol is primary concern here. The heart of this project is Bio metric module which works on serial (UART) protocol. 16X2 LCD display is connected to microcontroller through digital I/O pins.

**APPLICATIONS:**
- Industrials
- Commercial

**BLOCK DIAGRAM:**

![Block Diagram Image]
POWER SUPPLY BLOCK DIAGRAM:

Step down Transformer ➔ Bridge Rectifier ➔ Filter ➔ Regulator ➔ Output