FINGER PRINT BASED BANK LOCKER SYSTEM

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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, Finger Print proves to be one of the best traits providing good mismatch ratio and also reliable. The present scenario to operate a bank locker is with locks which are having keys. By this we can't say that we are going to provide good security to our lockers. 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 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.

The fingerprint module will be interfaced with the microcontroller through serial interface. The persons who can access bank locker, first need to enroll in the biometric scanner. But everyone can't enroll in the bank locker, because it has unique password for enrolling. Bank employees only know the password. If password is wrong we cannot enroll in the scanner. This system allows persons who are enrolled. If they didn't enroll it alerts through message on 16X2 LCD.

If the scanned image matches the stored image, the person is allowed to enter into the locker room. The main door of the locker room will be opened by rotating the stepper motor fixed to it. The door closes automatically after a small delay. If it is not matched, indication is given to alert the buzzer.

This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

TECHNICAL SPECIFICATIONS:

HARDWARE SPECIFICATIONS

- Micro controller : AT89S52
- Crystal : 11.0592 MHz
- LCD : HD44780
- LED : 5mm Red LED
- Serial driver : MAX-232
- Bio Metric Module
- Stepper motor
- ULN2008A
- Basic GPIOs

POWER SUPPLY

- Transformer : 12V step down
- Filter : 1000uf/25V
- Voltage Regulator : 7805 / 7812

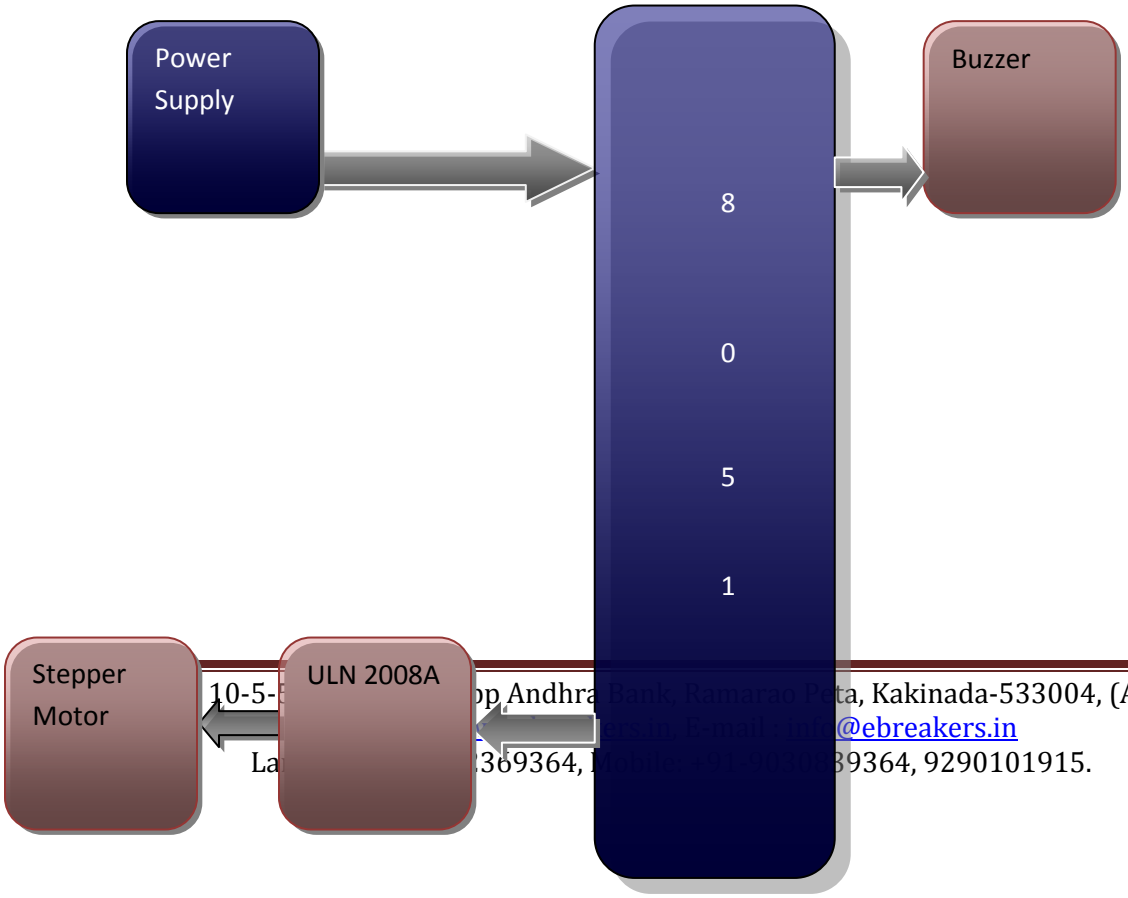
SOFTWARE SPECIFICATIONS

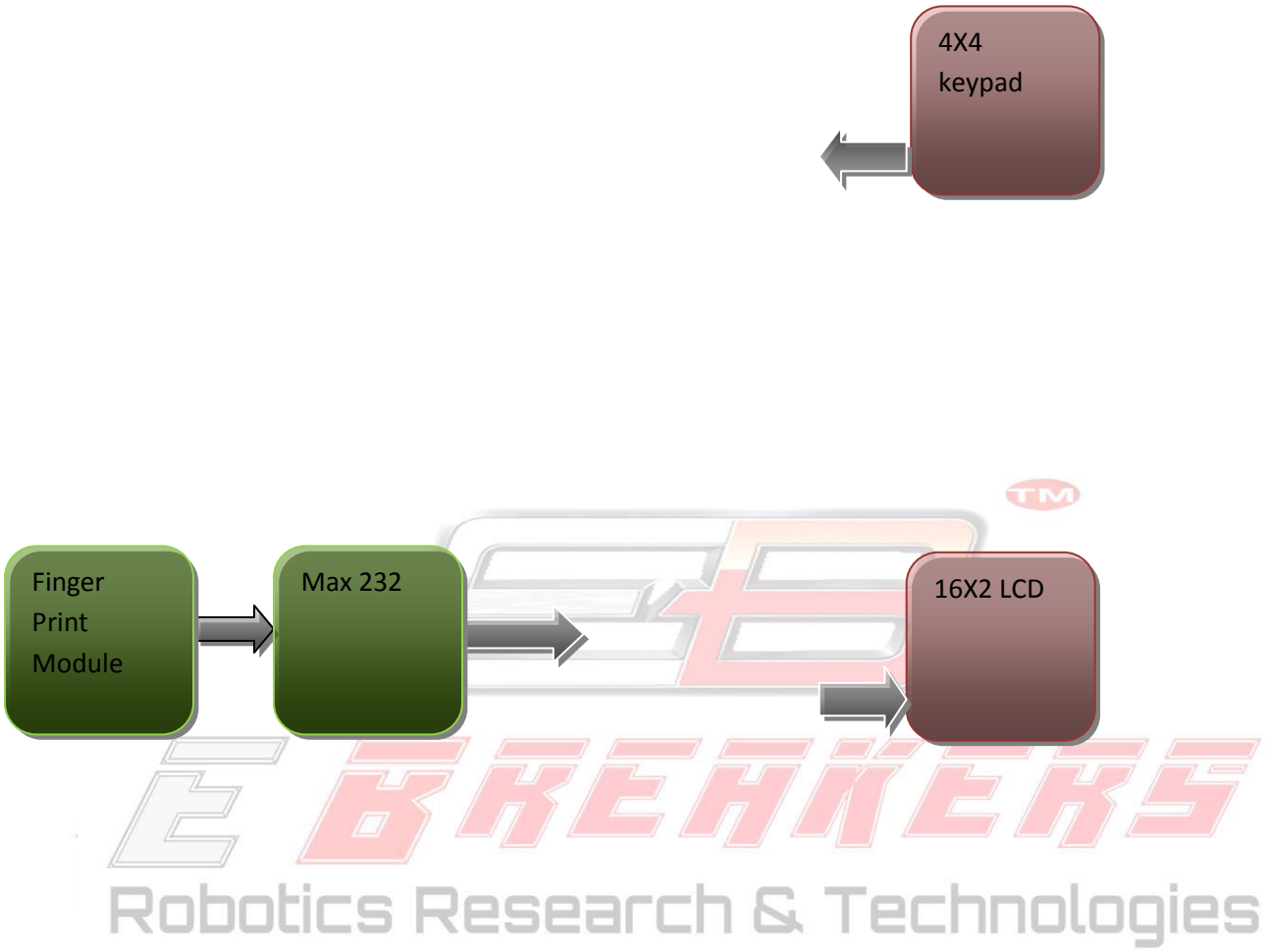
- Keil IDE
- Proteus VSM
- UC flash

APPLICATIONS

- Secure logins via keyboard modules
- User identification at kiosks
- Bank

BLOCK DIAGRAM:





POWER SUPPLY BLOCK DIAGRAM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