PASSWORD BASED ACCESS CONTROL SYSTEM PROTOCOL USING PIC MICROCONTROLLER

Title of the project	:	Password Based Access Control system Protocol using PIC Microcontroller
Domain	:	Embedded Systems Design
Software	:	Embedded C, Keil, Proload
Microcontroller	:	PIC16F877A
Power Supply	:	+5V, 500mA Regulated Power Supply
Display	:	LCD
LCD	:	HD44780 16-character, 2-line (16X2)
Input	:	3X4 Numeric key pad
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ABSTRACT:

Security is prime concern in our day-to-day life. Every one wants to be as much as secure as to be possible. An access control systems forms a vital link in a security chain. The micro controller based digital lock presented here is an access control system that allows only authorized persons to access a restricted area. This system is best suitable for corporate offices, ATMs and home security.

The system comprises a small electronic unit with a numeric keypad, which is fixed out side the entry door to control a solenoid-operated lock with the help of a relay. When an authorized person enters predetermined user ID and password via the keypad, the stepper motor is operated for a limited time to unlatch the solenoid-operated lock so the door can be open. At the end of preset delay, the stepper motor is operated in reverse direction and the door gets locked again.

When the code has been incorrectly entered three times in a row, the code lock will switch to block mode. This function thwarts any attempt by 'hackers' to quickly try a large number of codes in a sequence. If the user forgets his password, the code lock can be accessed by a unique 10 digit administrator password. The secret code can be changed any time after entering the current code (Master code).

A buzzer is provided for audio acknowledgment of the key impression. Whenever a key is pressed on the numeric key pad, the system acknowledges the impression by a short beep sound. This buzzer is driven by an NPN transistor.

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 out put of secondary of 230/12V step down transformer.

BLOCK DIAGRAM: