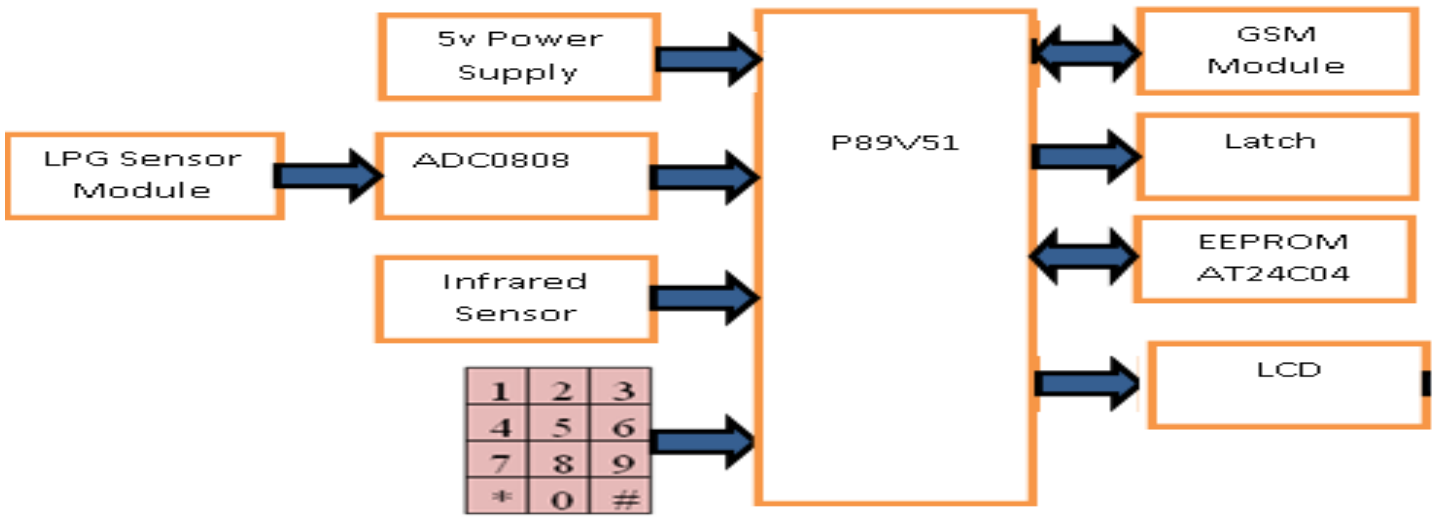
Project Title : DIGITAL KEYS FOR HOME DOORS

Block Diagram:-



A. Explanation of Block:

1. Power Supply-

This unit will supply the various voltage requirements for each unit.
This will be consist of transformer, rectifier, filter and regulator. The rectifier used here will be bridge rectifier. It will convert 230 VAC into desired 5V-12V DC.

2. Microcontroller-

We are using P89V51 microcontroller.The various features of it are-

- 80C51 Central processing unit.
- 5V operating voltage from 0-40 MHz.
- 64 kb of on-chip flash program memory with ISP and IAP.
- 3 16 bit timers counters .
- TTL and CMOS compatible logic levels.

3. LCD 16x2

We are using 16x2 LCD display. LCD has14 pin .

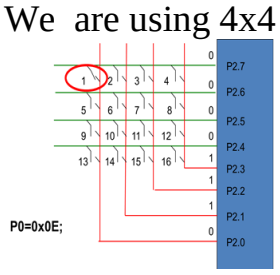
The most commonly used ALPHANUMERIC displays are
1x16 (Single Line & 16 characters),
2x16 (Double Line & 16 character per line) &
4x20 (four lines & Twenty characters per line).

4. GSM Module

GSM will provide unlimited range of communication for the system as long as there are intermediate nodes that will pass the data from one node to another until it reaches the destination. Prototype systems of electrical device switching are built utilizing GSM based sensor network to present an insight for its practical implementation in smart home concept.

5. KEYPAD

We are using 4x4 matrix keypad as shown below



6. EPROM AT24C04

We are using 4kb AT24C04 EPROM for storing the data.

7. INFRARED Sensor Module.

Infrared sensor is used for theft detection and has following feature-

- Photo detector and preamplifier in one package
- Internal filter for PCM frequency
- Improved shielding against electrical field
- disturbance
- TTL and CMOS compatibility
- Output active low

8. Gas sensor

Sensitive material of MQ-4 gas sensor is SnO2, which with lower conductivity in clean air. When the target combustible gas exist, The sensor's conductivity is more higher along with the gas concentration rising. Please use simple electrocircuit, Convert change of conductivity to correspond output signal of gas concentration. MQ-4 gas sensor has high sensitity to Methane, also to Propane and Butane. The sensor could be used to detect different combustible gas, especially Methane, it is with low cost and suitable for different application