HOME SECURITY SYSTEM USING GSM

AIM:

Design and development of Home security system using GSM.

PURPOSE:

Security is primary concern in everywhere. Especially in homes, security is very important. Security management by human is very tough and chance to neglect lot of things. Particularly in night time security patrolling is very touch. Avoiding unwanted entries also difficult. Here we proposed automation system like home security system using GSM.

DESCRIPTION:

This project includes GSM (Sim800C) module, which is connected to Arduino through UART. Ultrasonic sensor connected to Arduino digital PIN. Buzzer will be connected to Arduino digital Pin. Light also connected to Arduino digital pin through relay.

WORKING:

Arduino continuously reads Ultrasonic Sensor. If any person or any object moves Infront of ultrasonic sensor, it will send alert to Arduino. Immediately Arduino Switch ON buzzer and light. Also it will send SMS to registered mobile number. This information will be displayed on LCD.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
GSM	:	SIM800C
Intruder Detection Sensor	:	Ultrasonic Sensor (HCSR04)
Buzzer	:	5V DC
Relay	:	12v DC Electromagnetic
Light	:	230V AC
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

Arduino IDE

Proteus based circuit diagram
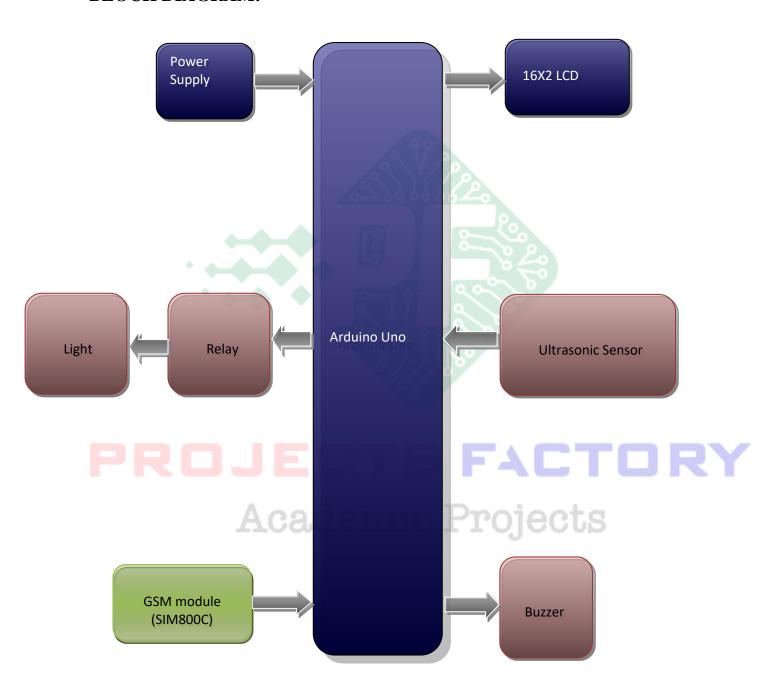
APPLICATIONS:

➢ Home Security
➢ Industrial Security

BLOCK DIAGRAM:

```
┌──────────┐                           ┌──────────┐
│  Power   │ ───────►  ┌─────────┐  ──► │ 16X2 LCD │
│  Supply  │           │         │      └──────────┘
└──────────┘           │         │
                       │         │
┌──────┐  ┌───────┐    │         │      ┌──────────────────┐
│ Light│◄─│ Relay │◄── │ Arduino │ ◄──  │ Ultrasonic Sensor│
└──────┘  └───────┘    │  Uno    │      └──────────────────┘
                       │         │
┌──────────┐           │         │      ┌──────────┐
│GSM module│ ───────►  │         │  ──► │  Buzzer  │
│ (SIM800C)│           └─────────┘      └──────────┘
└──────────┘
```

POWER SUPPLY BLOCKDIAGRAM:

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

INTERFACES COVERD:

- We have covered GSM (SIM800C) module interfacing
- Ultrasonic sensor interface