WIRELESS HOME SECURITY USING ZIGBEE AND GSM

AIM:

Design and Development of Wireless home security using Zigbee and GSM.

PURPOSE:

Theft rate increased day by day. Manual monitoring through security guards is expensive and will not possible by everyone. Here embedded products are come into picture and not expensive. Embedded products consist of controller and sensor interfaces which consume less power. Here we propose solution like wireless home security using Zigbee and GSM.

DESCRIPTION:

This project includes Zigbee module (HC12), which is connected to Arduino through UART interface. GSM (SIM800C) connected to Arduino UART. LM35 connected to Arduino analog pin. IR sensors connected to Arduino digital pins. DC fan controlled through relay which is connected to Arduino digital pin.

WORKING:

In this project we can monitor home through mobile phone and through Zigbee. Monitoring Zigbee placed at central room (central monitoring room). Sensors side section placed living room. LM35 reads temperature of room and if temperature more than45 degrees then fan will be ON also SMS will be sending. When fire occur then buzzer will be ON and SMS will be sending. Two IR sensors placed at door and window to detect intruder entry. If any intruder entry then SMS will be sending and buzzer will be ON. All these sensors data displayed on LCD and transmitting to central monitoring system.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
Zigbee Module	:	HC12 - 433MHZ or 2.4Ghz
GSM	:	SIM800C
Temperature Sensor	:	LM35
Intruder Detection	:	IR sensor
Fire Sensor	:	IR sensor
Relay	:	12V DC
Fan	:	12V DC
Buzzer	:	5V DC
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

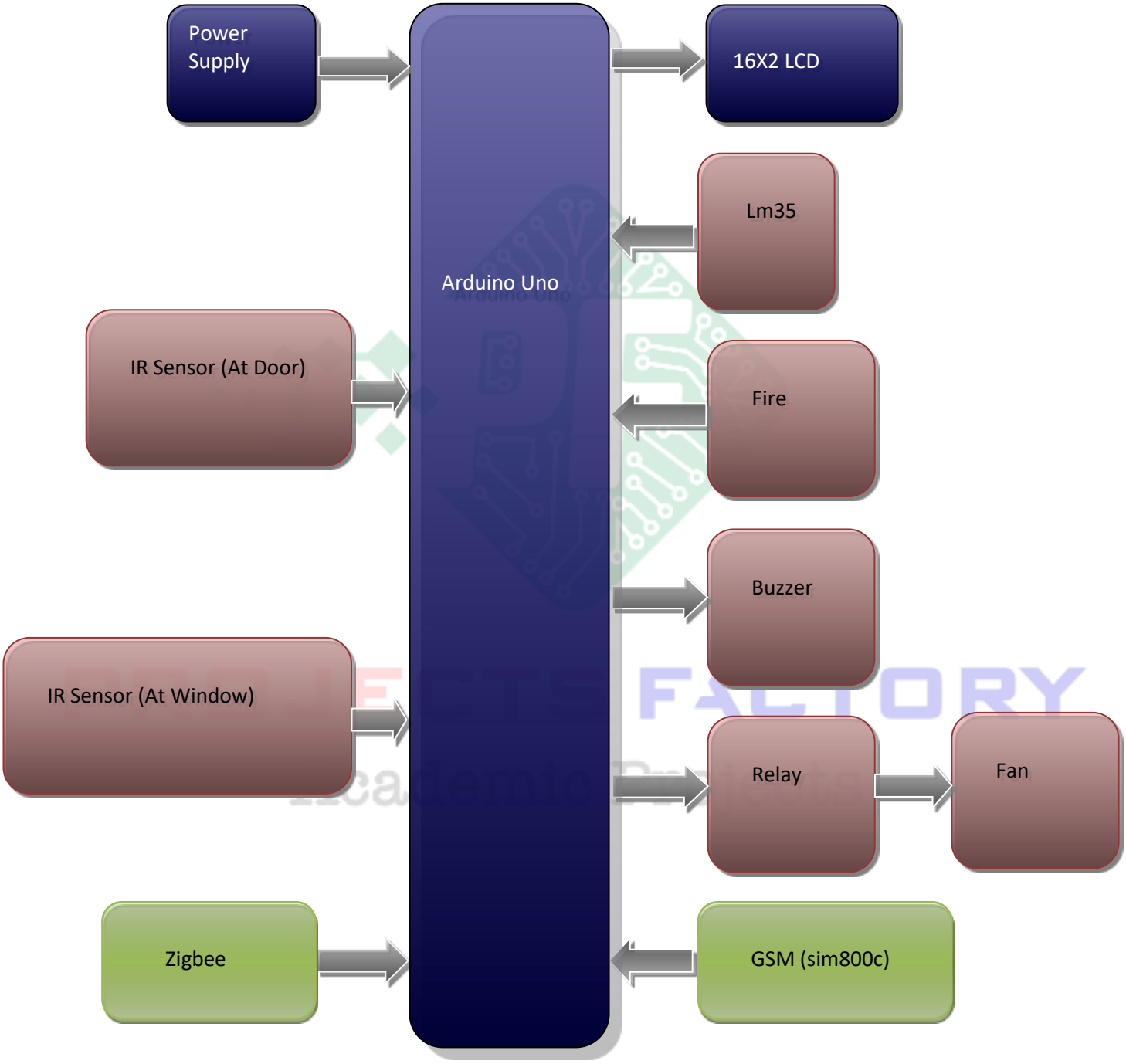
Arduino IDE

Proteus based circuit diagram

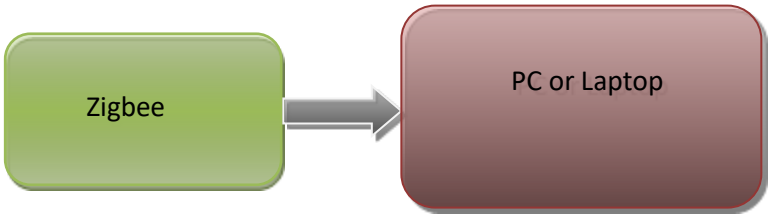
APPLICATIONS:

- Home Security
- Shopping mall Security
- Office security

BLOCK DIAGRAM:
Living Room:



Central Monitoring Room:



POWER SUPPLY BLOCKDIAGRAM:

INTERFACES COVERD:

- We have covered Zigbee (433Mhz or 2.4Ghz – HC12) module Interfacing
- LM35, IR sensors and fire Sensors Interfacing
- Relay and DC Fan interfacing