CNG AND LPG GAS ACCIDENT PREVENTION USING GSM

AIM:

Design and development of CNG and LPG Gas accident Prevention using GSM with Arduino.

PURPOSE:

Gas is energy generation source and possibility to meet fire accidents. Especially CNG and LPG are used in movable applications and stable applications. Most of the petrol vehicle used CNG as alternative fuel source. But there is chance to occur fire accident while moving or hitting to another vehicle. LPG used in homes and industries and possibility to happen fire accident due to poor maintenance. Monitoring of any gas leakage in initial stage will help to take any action before spreading. Here we have solution like CNG/LPG gas accident prevention using GSM. Prevention taken by closing valve in 90 degrees.

DESCRIPTION:

This project includes GSM (Sim800c) module, which is connected to Arduino through UART interface. MQ4 sensor connected to Arduino through digital IO pin. MQ4 helps to detect CNG. MQ6 sensor connected to Arduino through digital IO pin. MQ6 helps to detect LPG. Siren will be controlled through relay, which is connected to Arduino digital IO pin. Servo motor also connected to Arduino.

WORKING:

Arduino reads MQ4 and MQ6 sensors continuously. These sensors status displayed on LCD. Siren will be ON when any sensor gets activate. SMS will be send to registered mobile number when any sensor activated. Also Servo motor rotates 90 degrees. Here servo motor controls gas valve.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
GSM	:	SIM800C
LPG Sensor	:	MQ6
CNG Sensor	:	MQ4
Servo Motor	:	MG Series
Siren	:	5vDC
Relay	:	12v DC Coil type
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

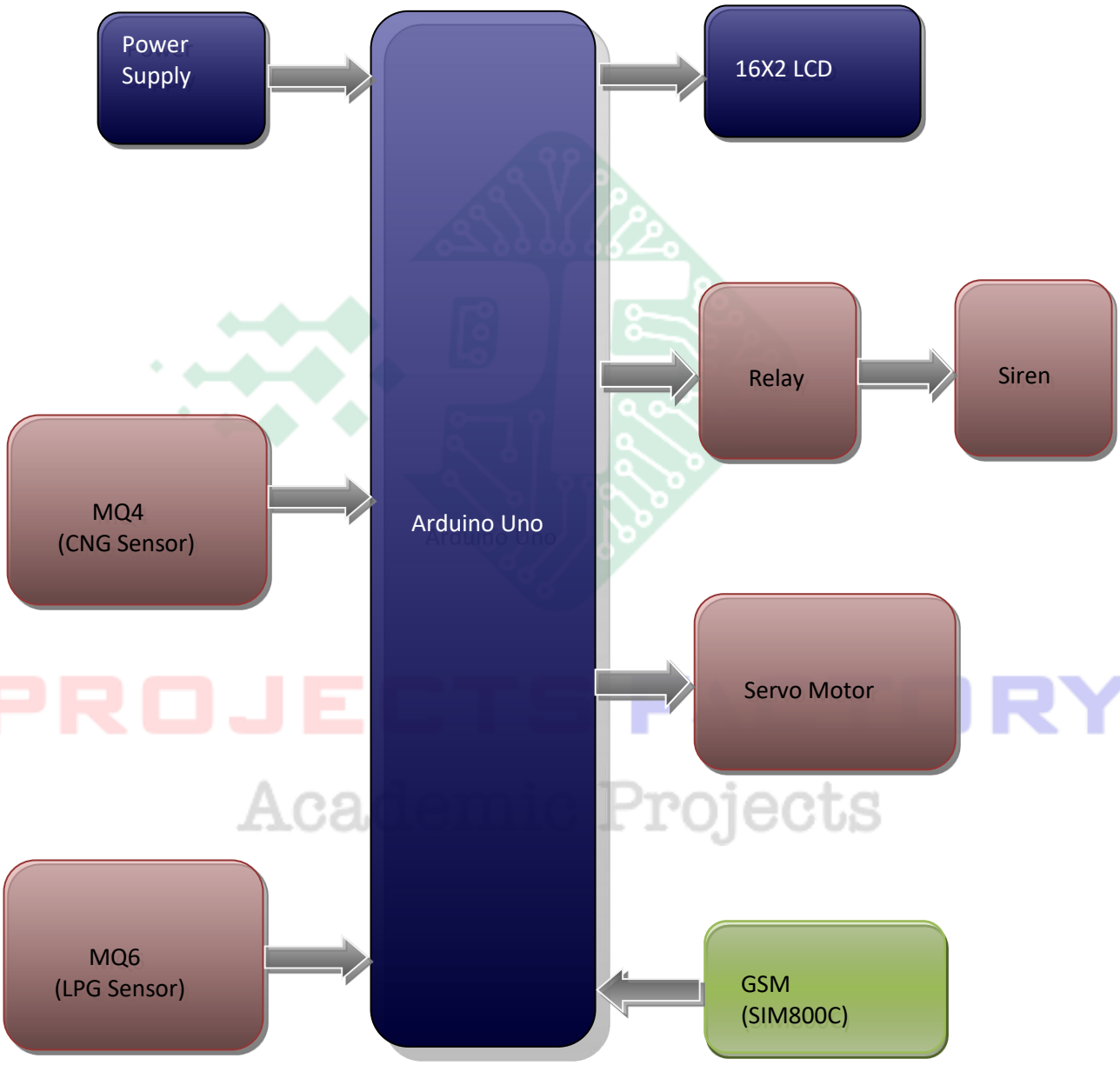
Arduino IDE

Proteus based circuit diagram

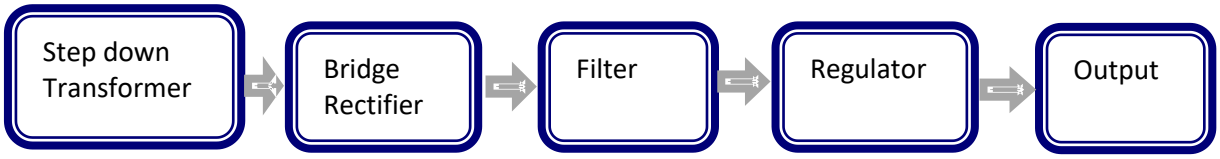
APPLICATIONS:

- Home Appliances
- Vehicles
- Industrial Applications

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- We have covered GSM (SIM800C) module interfacing
- MQ4 and MQ6 sensors interface
- Servo Motor interface