

IOT BASED GAS CYLINDER LEVEL AND LEAKAGE DETECTION USING ARDUINO

AIM:

Design and Development of IOT based gas cylinder level and leakage detection.

PURPOSE:

LPG and CNG widely used for industrial and domestic purpose. LPG used for kitchen cooking and CNG used for energy generation for vehicles and industries. Gas leakage will happen and result will be disaster if we neglect. With advanced technology, we can build a system that can detect gas level and gas leakage along with fire alert. IOT is growing technology and it can transmit data from remote location. By adding IOT to this system, it will help to domestic kitchen applications. It will tell when cylinder level about to empty and we will get notification when any gas or fire sensors activated. Here proposed project title is IOT based gas cylinder level and leakage detection using Arduino.

DESCRIPTION:

Load cell interfaced with Arduino analog pin. Based on weight it will generate ADC output with 0 to 5V. ESP8266 IOT module interfaced with Arduino UART port. Smoke sensor (Mq2), Fire sensor and buzzer connected to Arduino digital pins respectively.

WORKING:

Arduino calculates weight of the cylinder. Weight and gas level are directly proportional. If cylinder weight is more that mean high cylinder level and vice versa. Also Arduino reads gas and fire sensors status. Arduino displays all sensors data on LCD and send to IOT cloud server. Every 30 sec time interval data will be transmitted to server. Also if smoke or fire sensors activated then also data will be

transmitted to server. Data nothing but gas cylinder level, smoke sensor status and fire sensor status. We can monitor these parameters from remote location. When gas cylinder level below 30 percent then buzzer will be ON, that indicates about to empty. Using this project we can protect kitchen from fire accidents also.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontrollers	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
WIFI module	:	ESP8266
Load cell	:	ADC output 0-5V
Buzzer	:	DC 5V
Fire sensor	:	IR based
Smoke sensor	:	MQ series
Power Source	:	12V, 1 amp DC adaptor

SOFTWARE:

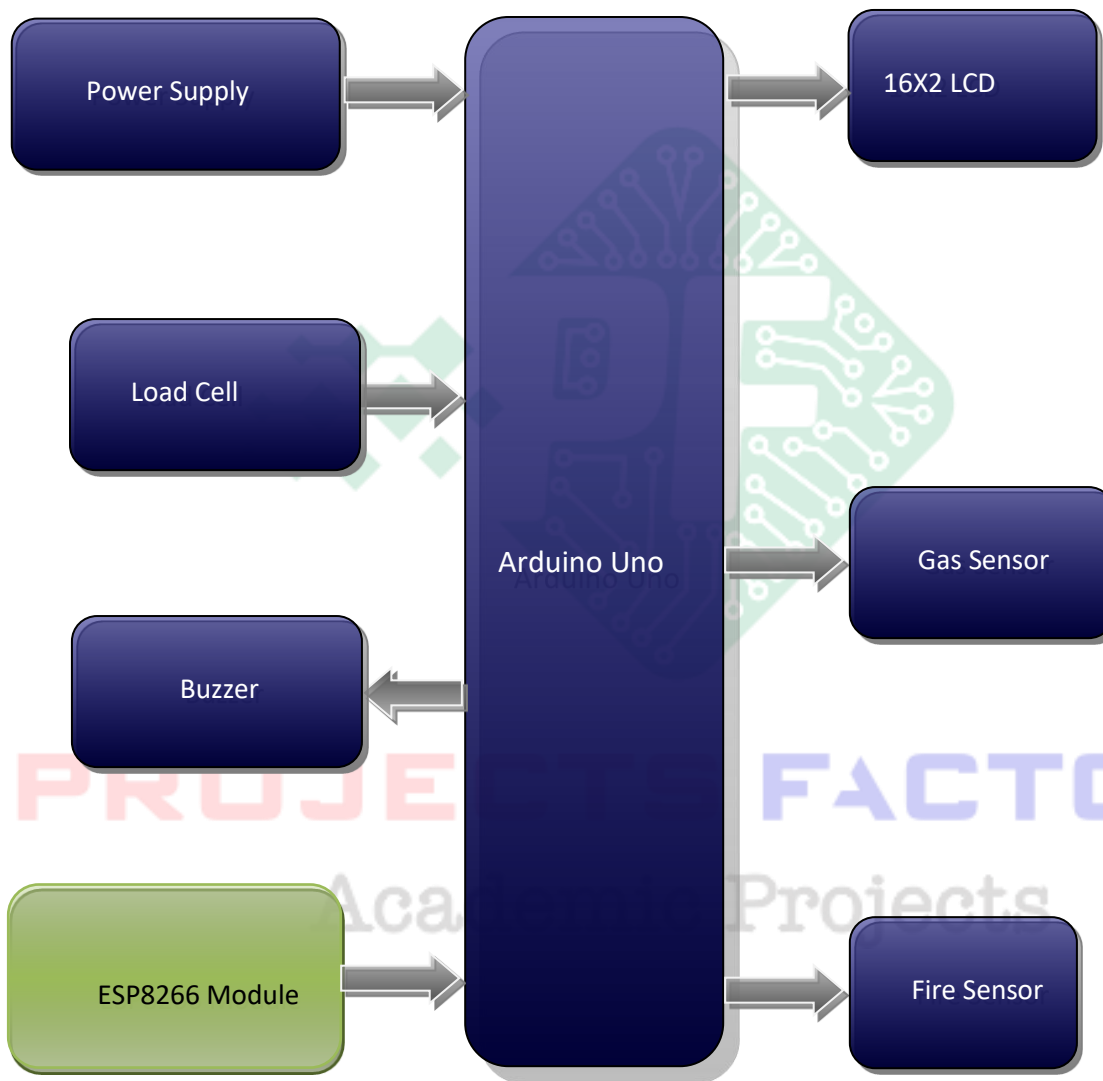
Arduino IDE

Proteus based circuit diagram

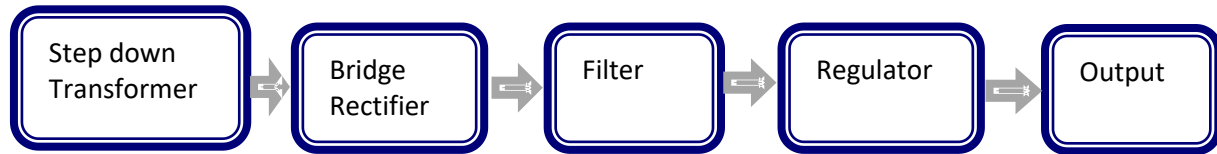
APPLICATIONS:

- Gas cylinder monitoring system
- Kitchen applications
- Gas and fire detection system

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered ESP8266 (IOT module/WIFI) interface
- Load cell, fire sensor and gas sensor interface

PROJECTS FACTORY
Academic Projects