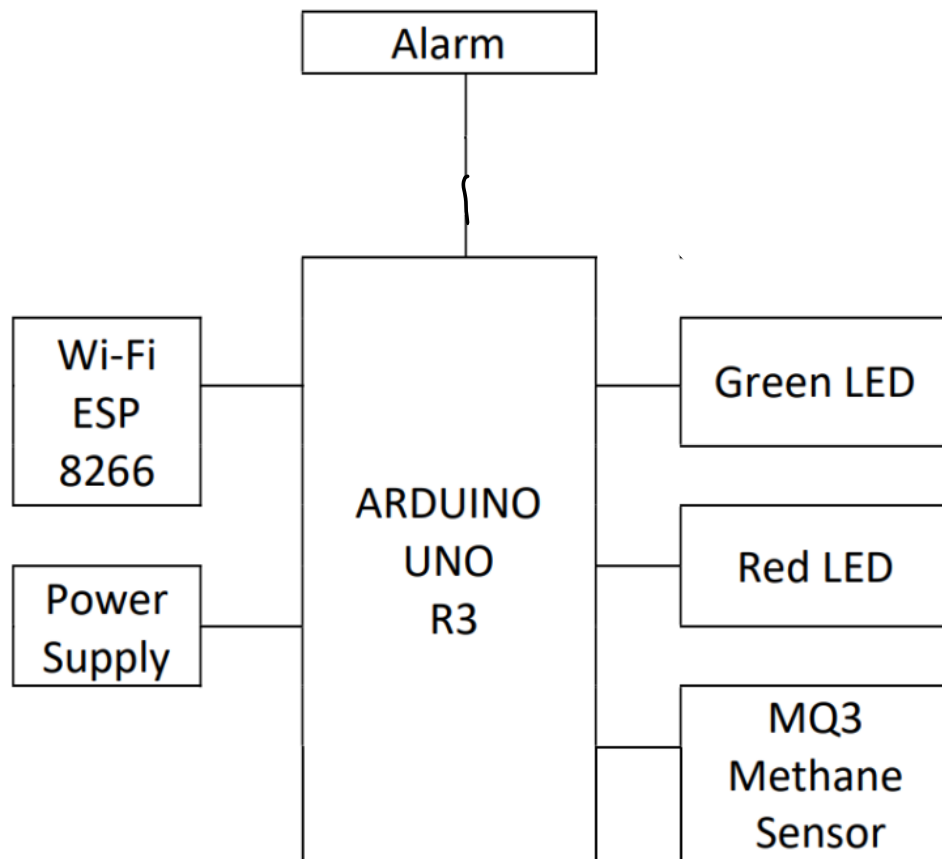


## COMPONENT:

1. NodeMCU ESP8266
2. Arduino Uno R3
3. MQ4 methane gas sensor
4. Buzzer
5. LED
6. Jumper Wire

## BLOCK DIAGRAM:



## **CONNECTION:**

### **1) Connect Buzzer to Arduino UNO:**

- i. Positive terminal (long end) should be connected to any digital pin say digital pin D10 on Arduino
- ii. Negative terminal (short end) should connect to common ground on breadboard

### **2) Connect LEDs to Arduino UNO:**

- i. Positive terminal to digital pin D13 or any other digital pin on Arduino
- ii. Negative terminal to common ground on bread board

### **3) Connect NodeMCU to Arduino UNO:**

- i. Here we are using NodeMCU with ESP8266 12E Wi-Fi Module Serial communication is required to transfer data between arduino and NodeMCU.
- ii. Rx of NodeMCU to any digital pin say D9
- iii. Tx of NodeMCU to any digital pin say D8
- iv. GND to GND of arduino (or common GND)

### **4) How to connect MQ4 Sensor to Arduino UNO R3:**

- i. Analog pin of sensor i.e AD to A5 or any analog pin of arduino
- ii. D0 digital pin is kept as it is
- iii. GND pin of sensor is connected to GND pin of arduino (or common GND)
- iv. Vcc pin of sensor to 5V power supply pin of arduino

For all these data captured by sensor to be transferred from arduino to NodeMCU and also to the thingspeak app cloud through ESP8266 12E Wi-Fi module few libraries are to be installed in Arduino IDE application.

## **SOFTWARE UESD:**

1. Arduino IDE
2. ThingSpeak IOT