Name of Project: Smoke detection using MQ2 smoke sensor.

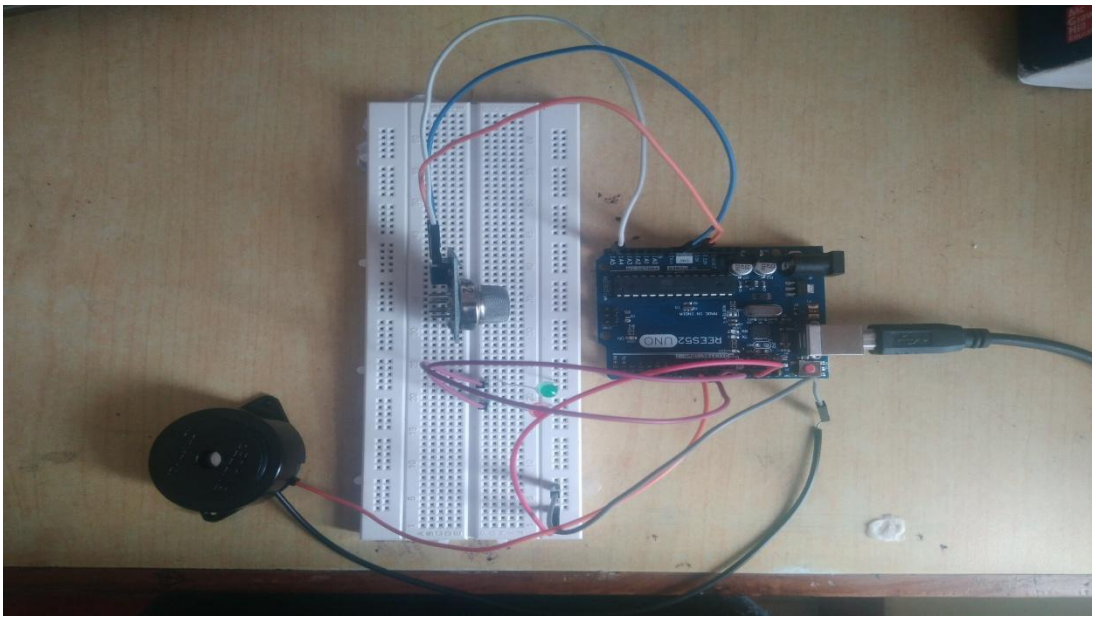
Components required:

1. Arduino UNO
2. Smoke detector sensor
3. Jumper wires
4. Buzzer
5. LED lights
6. Breadboard
7. USB cable

Description:

The sensor analog output voltage will be read and when the smoke reaches a certain level, it will make a buzzer sound.When the output voltage is below the level buzzer sound will not be made.
Smoke sensor: It has a built in potentiometer that allows to adjust the sensor sensitivity according to how accurate we want to detect the smoke.
The voltage that the sensor outputs changes accordingly to the smoke level that exists in the atmosphere. The sensor outputs a voltage that is proportional to the concentration of smoke.The greater the concentration the greater the output voltage and viceversa.
The output can be an analog signal that can be read from analog input or a digital output that can be read with a digital input of the arduino.

Circuit:



Code used:

```
int redLed = 12;
int greenLed = 11;
int buzzer = 9;
int smokeA0 = A5;
int sensorThres = 300;
void setup() {
  pinMode(redLed, OUTPUT);
  pinMode(greenLed, OUTPUT);
  pinMode(buzzer, OUTPUT);
  pinMode(smokeA0, INPUT);
  Serial.begin(9600);
}
void loop() {
  int analogSensor = analogRead(smokeA0);
  Serial.print("Pin A0: ");
  Serial.println(analogSensor);
  // Checks if it has reached the threshold value
  if (analogSensor > sensorThres)
  {
    digitalWrite(redLed, HIGH);
    digitalWrite(greenLed, LOW);
    tone(buzzer, 1000, 100);
  }
  else
  {
    digitalWrite(redLed, LOW);
    digitalWrite(greenLed, HIGH);
    noTone(buzzer);
  }
  delay(100);
}
```

Observation:

When the sensor value reaches above threshold value i.e when the quantity of smoke increases, buzzer is activated and along with it red LED also glows .

Application:

Fire Alarm
Gas leakage alarm