Amrutvahini College of Engineering, Sangamner
Department of Electronics and Telecommunication

Mini Project Synopsis
Academic Year: 2021-22

Title:

Home Air Quality Monitoring System.

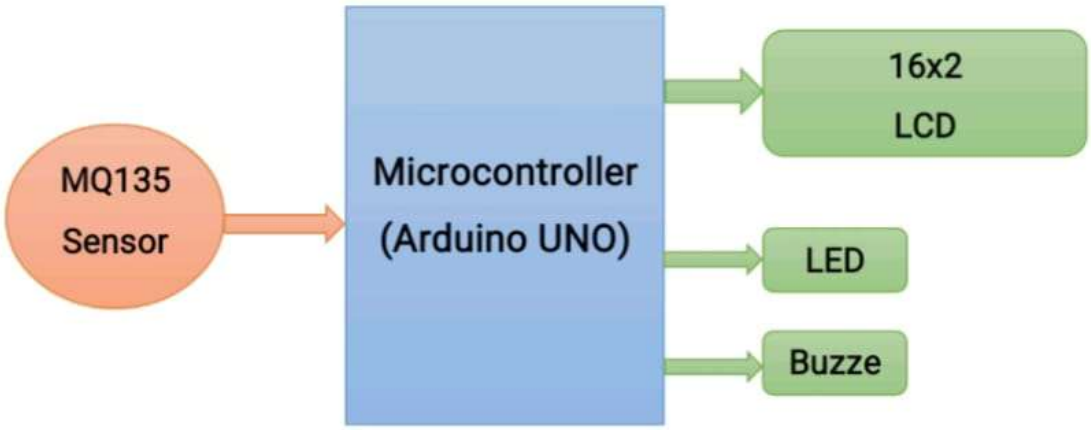
Introduction:

To measure the air quality in the apartment, this air quality monitoring system can be used. This air quality detector not only measures the Carbon Dioxide (CO2) level in the air, but also measures the level of humidity and temperature both inside the room and outside environment. This project consists of two sensors namely, temperature cum humidity sensor and CO2 sensor. These sensors are attached with the system inside the room to calculate the room temperature, humidity and CO2 and also on the roof of the house to calculate the atmosphere temperature, humidity and CO2. It also has LCD attached to it which displays the value of the temperature, humidity and CO2 levels measured.

Component list:

- MQ 135 Sensor
- Arduino UNO
- Breadboard
- Buzzer
- Jumper Wires Pack
- LED
- 16x2 LCD Display

Block diagram:



Working:

Connections:

1.DTH11's voltage, ground is connected to +5V and 0V and signal can be connected to any Digital Pin 8 of Arduino Uno

.2.MQ135's voltage and ground are connected to +5V and 0V and analog output pin is connected to analog Pin A0 of Arduino Uno.

3.LCD RS pin to digital pin 12, Enable pin to digital pin 11,D4 pin to digital pin 5, D5 pin to digital pin 4, D6 pin to digital pin 3, D7 pin to digital pin 2, R/W pin to ground, VSS pin to ground, VCC pin to 5V, 10K resistor ends to +5V and ground and wiper to LCD VO pin.

4.The data pins of DHT11 are connected to Digital pin of NodeMCU and that of MQ135 is connected to Analog Pin.

5.The base of 2N2222 transistor is connected to a pwm pin of Arduino Uno and the emitter and collecter of transisitor is connected to the DC Fan and supplied with 9V battery (in Forward Bias). The other connections are kept the same.

Reference:

https://en.wikipedia.org/wiki/Arduino#/media/File:UnoConnections.jpg
http://www.circuitbasics.com/how-to-set-up-the-dht11-humidity-sensor-on-an-arduino/
https://playground.arduino.cc/Main/DHT11Lib
https://www.robot-r-us.com/vmchk/sensor-temp/humid/dht11-temperature-andhumiditysensor.html
https://electrosome.com/power-supply-design-5v-7805-voltage-regulator/

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Remark of Mini Project Guide:

Remark of Head of Department:

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