PROJECT SYNOPSIS

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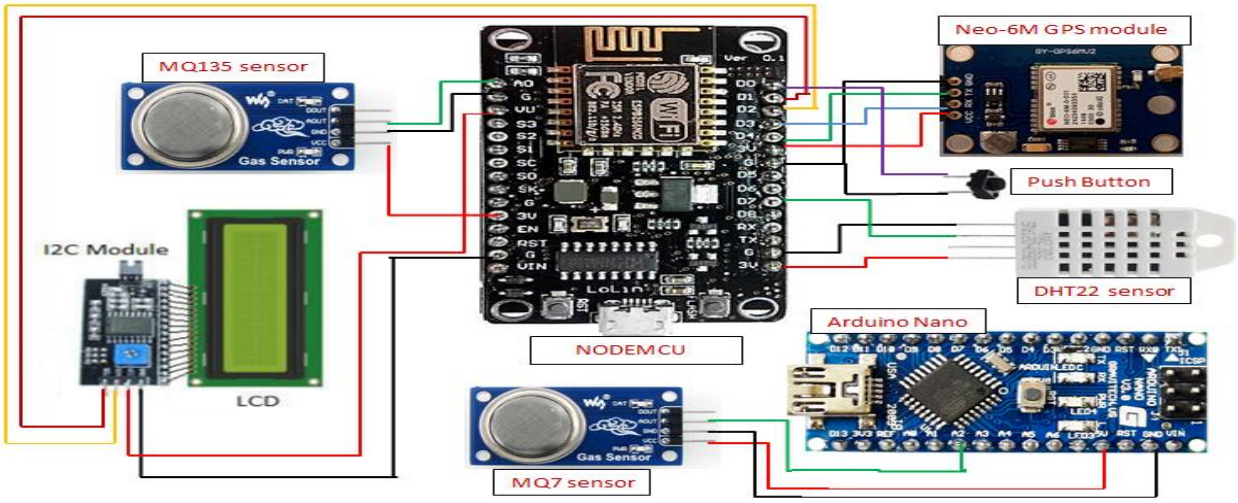

Air Pollution Analyser Device (Block Diagram)….

Hardware Based Project.

INTRODUCTION/THEORY

This air pollution monitoring device is required to know about the more polluted area and try to escape from that area. This device helps in finding the safest path for the users. Once the polluted area is determined, we can take various preventive measures to control the air pollution. This device will display the quality of air in ppm and on the LCD and on the google spreadsheets as well so that we can monitor it very easily.

In this design, we have used various sensors that helps in measuring various parameters that affects the air pollution. Noting the values of these sensors, we can take the preventive measures accordingly to minimize the air pollution. The worst effect of air pollution is on the health of the senior citizens of our society. This device is very helpful for the society. Infact, it can be used anywhere and we can monitor its data from our home through the google sheets. It regularly updates real time data on the google sheets.

Hardware Requirement…

- Nodemcu
- MQ135 sensor
- MQ7 sensor
- DHT22 sensor
- 16*2 LCD module
- I2C module
- Neo 6M gps module
- Arduino Uno

Software

Arduino IDE

Pspice

Google sheet

OUTCOME OF PROJECT

In this project we used the simple ppm, temperature and humidity sensors to detect the temperature, humidity and air pollutants in four different regions using MQ135 air and DHT22 sensors connected to NodeMCU which acts as client and register their readings to the server. The server then updates these values dynamically to a database which can be evaluated later on for preventing the pollution in these regions. The device can be used to fetch data at every minute and it transmit data via Wi-Fi to the google sheets. Also, the data is displayed on the LCD display .The model is making the use of only two sensors spread over various regions but it can be expanded to connect multiple sensors which measure different physical parameters as desired. Also the coverage area which in this case is restricted to only four regions can be expanded globally to cover many more regions through a mesh network of multiple clients. The model can be also be used for qualitative measurements wherein it could also indicate when the detected values are above their permissible values suggesting that effective measures to curb these may be taken in the area. There is an issue with the GPS sensor too, the sensor is not as accurate as required. It can be changed with other more precise sensor. Also the device is also dependent on the Network/Wi-Fi so, it should also be taken care of while creating the device. With improved accuracy and proper deployment this model will act as a milestone in environmental protection.