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ABSTRACT

Air pollution everything you need to know.....

Whereby! I'd enlighten you up with the scientific breakthroughs that has led to the horrendous scenario of the environment. Living at the threshold of the third millennium environment isn't imperceptible, therefore , it's been a substial issue since a really long time .Among the scientific revolutions , one such technology that hovers the environment status is nothing by IOT, that is a modern technique laid forward with the involvement of the internet all over to ensure a superior future.

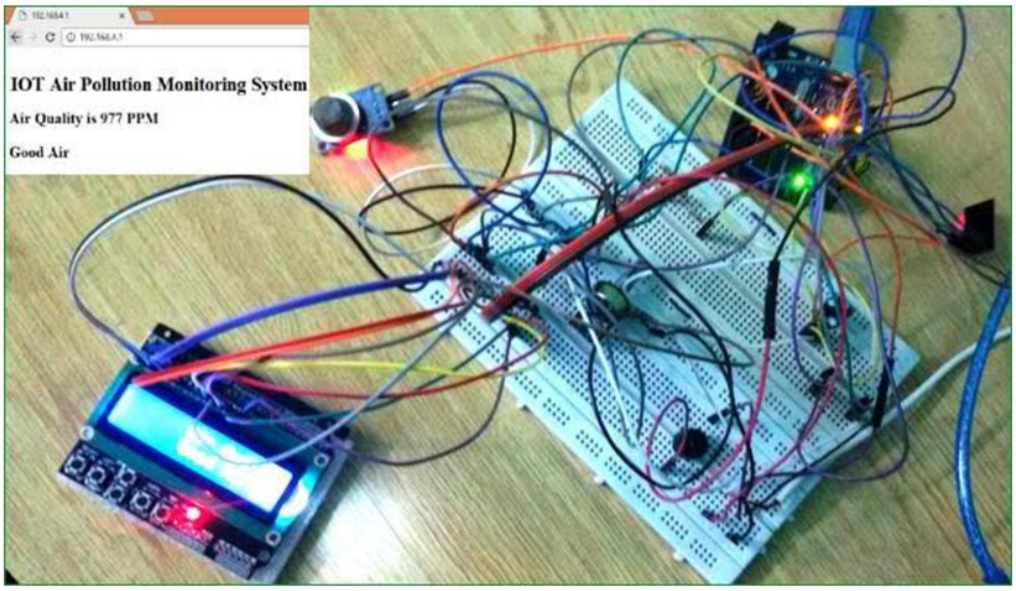
IOT has reformed with the tech revolution such as real time analytics, machine learning, embedded set of systems and sensors. The outer revolution /advanced civilisation is bagged with IOT and its applications into various sects= consumer oriented, commercial and industrial and eco oriented. Stepping into the roots -Air pollution is nothing but a mix of particles and gases that can reach harmful concentrations both outside and indoors, the effects has plethora of ranges, right from higher disease risks to horrendous rising temperature which when glanced aren't imperceptible. Let me ignite, the intriguing question as though what factors struck me to choose air pollution. Well! Beginning with the roots of air pollution, burning of fossil fuels, exhaust from factories, mining operations, discharge toxic chemicals etc.

Catastrophic effects are somewhat apprehensive. Respiratory and heart problems are at an alarming rate. Immediate alterations giving rise to global warming. Acid rain, eutrophication is proved to be obnoxious for the mankind. Malicing wildlife and depletion of O3 layer are horrendous and perturbed. It was cocked up from the ancient times....
IOT is the extensive expansion of internet connectivity to perpetuity relating to plethora of physical devices and day to day objects encircling series modules, buzzers, LCD or webserver, sensors, Arduino microcontroller etc. This device proposed will trigger an alarm call when the quality of the air falls from a fixed level, leaving the adequate amount of harmful gases present in the air like CO2, NH3, ETC.

WHAT IS IOT ???

OBJECTIVE

The IOT is the extensive expansion of internet connectivity to perpetuity relating the plethora of physical devices and day to day objects encircling electronics, internet connectivity, consisting buzzers, sensors, monitoring system, etc. Internet serves as a means to communicate for these devices and volley back accordingly. Supervised under the monitoring control of sensors. Decades one after the other IOT has reformed. The devices include a span of large geographic area, also on a mobile it can be monitored. It's pretty affirmative, that standardization of iot along with the wireless sensing, will fluorescence the world ahead.



WHAT EXACTLY IOT MEANS TO US ???

Terminology of iot technology in the professional world/economic world is symbolic to the upshot of a "smart home" consisting, devices and appliances, monitored via devices associated such as smartphones and smart speakers and webserver etch!!!! Cycles of technology have reformed it altogether...

The world revolves around technology, in this machine oriented competitive world, IOT took the chase, further it expands in the following : smart homes- ie:apple's home kit , the users can monitor the data pertaining to their home products and accessories, VIA IOS operating in iPhone and apple watch, iot portrays tales of indulgence for the elder care, the assistance via technology to counter their needs and wants. Also! Medical and healthcare, transportation, home automation, manufacturing etc. Centring environment monitoring sensors are designed to monitor air , water, atmospheric , soil conditions and wildlife as well …IOT is revolutionarising day by day, min by min, sec by sec... under iot each and every device proposed is way different from the other... various technologies enables iot to work efficiently such as addressabity, wireless or wired connections consisting short, medium, long range. Plethora of organizations keep track of the technical standards....

NEED TO MONITOR AIR POLLUTION VIA IOT !!!

Air is a complex system. Advantages of IOT under air pollution monitoring system by getting the analysis of this data, by the sensors which'd help in maintaining a good safety record. Also, profitable for the inaccessible areas that could also effectively utilise the sensors for a better tomorrow. Perks of the need of iot in order to monitor the air pollution is low cost, portable compounds monitoring system, which monitors plethora of parameters consisting humidity, PM etc.

In this technological world, iot plays a crucial role. Iot drives to uplift the potential oriented objects and billions of devices encircling the sharing, receiving, analysing tons amount of data, bringing about business deals and blossom vastness of decision making. Iot evolves opportunities and interlinks the computer world to the real world of mankind resulting in human exertions, economic benefits, efficiency improvements .....call it need or requirement , in a broader spectrum IOT in the environment monitoring(air pollution) highlights , to conserve the air , that turning toxic , horrendous day by day.... stepping into the roots, these sensors, devices for used in regulatory purpose!!!

ARCHITECTURE AND LITERATURE OF THE DEVICE

As per earlier learned, the plethora of steps or measures are devised for the cause. Digging into IOT, VIA air pollution monitoring system. The architecture for it ..... The architecture itself, suggests the model of the final system and process as though how is it developed, the technical specification and implementation for the matter. The architecture will lens up the software and hardware design. Materials required MQ135 , Gas sensor , Arduino Uno, WIFI module ESP8266 , 16×2 LCD , Breadboard, 10k potentiometer, 1k ohm resistor , 220 ohm resister , buzzer,

Arduino Uno consisting- 14 digit output/input pins, 6 analog inputs, USB connection, a power puff jack, a reset button etc... it has almost everything to power up the micro controller. Further, it can be connected to a computer or battery via AC/DC or USB.

ESP8266 WIFI module -it's a series module build in transmission control protocol stack, and using a semiconductor future tech. Device international called as FTDI is used to connect this WIFI module to the computer and communicate accordingly. TTL serial connected to the computer via USB. Thus, USB-TTL (serial converter) is also called as FTDI .

WORKING OF THE PROPOSED SYSTEM ...

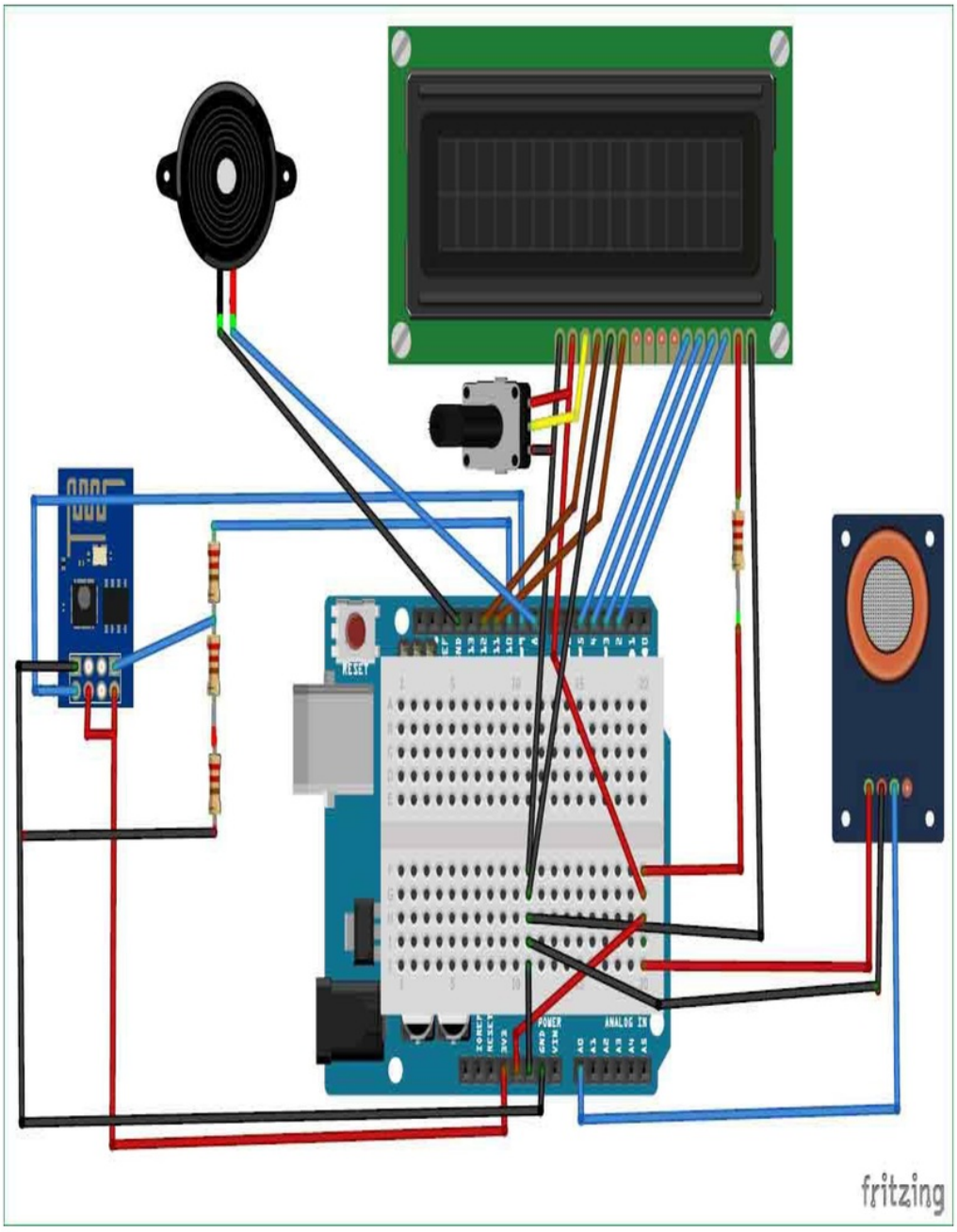
The working of the proposed system as per the motive to regulate the air pollution and monitor it accordingly!

MQ135 gas sensor can sense the gases such a NO2, Smoke, alcohol etc. connecting it to the Arduino, it'll give the pollution level in PPM. BUT! here MQ135 gas sensor its output is delivered in voltage, thus, there's a need to convert it into PPM, with the desired codes via Arduino IDE software, which'll simply the codes. The sensor will provide us the various values. Moreover, 350 PPM to 1000 PPM is the safe level of air quality. Hence, the value more than 1000 ppm is proved to be dangerous for the mankind. Now, the role of the LCD and the webpage showcases the following =

Value less than 1000, the LCD will showcase "fresh air"...on the LCD and the webpage.

Value more than 1000 PPM will showcase "poor air" and will result the buzzer to beep

Value exceeding 2000 will showcase "Danger, move to fresh air" and the buzzer will keep on beeping.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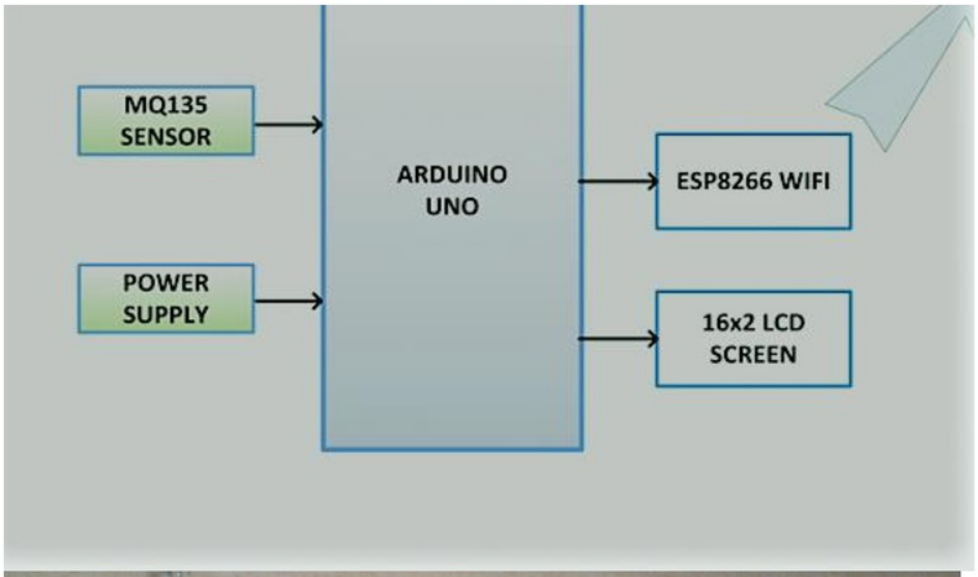
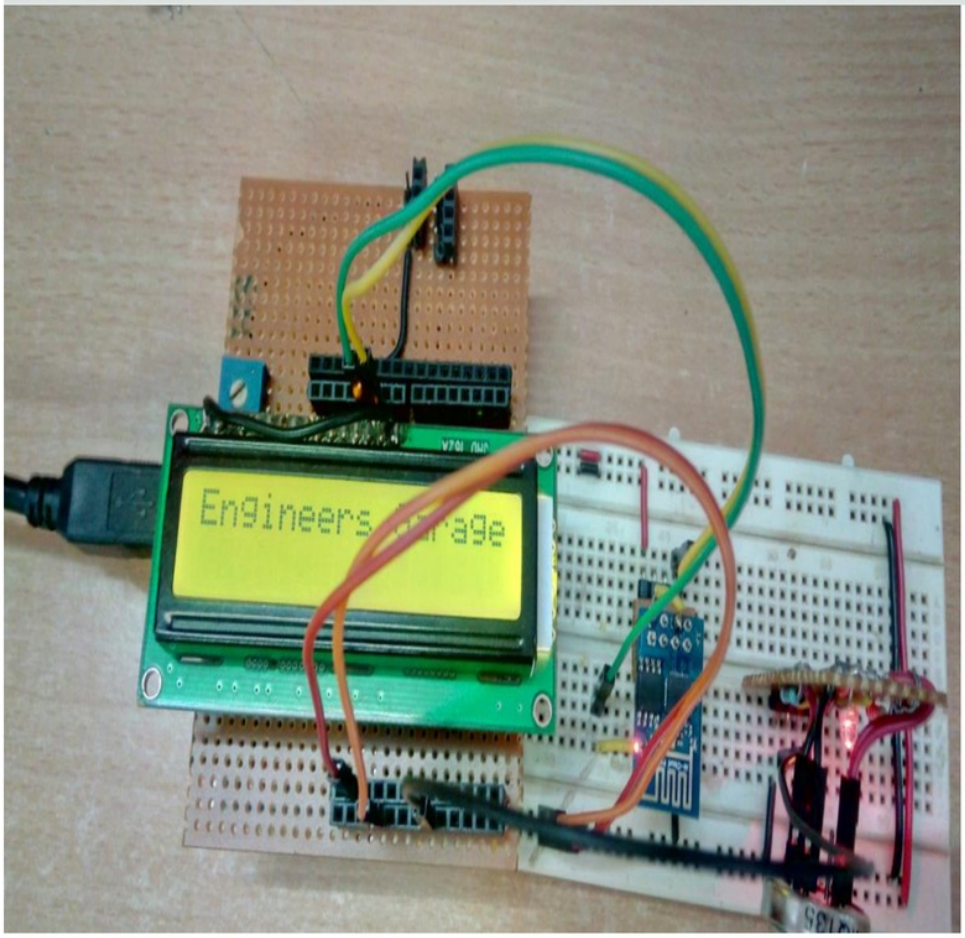

MQ135
SENSOR
POWER
SUPPLY
ARDUINO
UNO
ESP8266 WIFI
16x2 LCD
SCREEN



CONCLUSION AND FUTURE SCOPE.

The system is user friendly, has adequate options to access, thus, the user can exercise various operations with the proposed system. The merits are as follows- cost effective, easy construction of the sensors, no human intervention, no errors a simple Arduino ide software code, portable and flexible for the further enhancement. Thus, it uploads the data on the LCD triggers the alarm, makes the public aware, allows them to keep track about the pollution level in their area. This showcases real quality value measurements of air. The report has been finalised. Thus, I conclude it's a powerful technique under IOT, in order to monitor the air pollution. Thus, future aspects would definitely improve the existing methods and this method would prove to be an enlightment ! In a nutshell, the iot proposed model system would monitor the pollution be it indoors or outdoors... can be used into action in the areas such as markets, hospitals, bus stands accordingly. Further modifications can be done in it, if the codes are enhanced and the data is preserved for later experiments in the near future. Thus, the effects of iot and its applications are stapling in the mankind slowly and gradually....

REFERENCES....

1. https://en.m.wikipedia.org/wiki/Internet_of_things
2. www.jncet.org
3. https://circuitdigest.com/microcontroller-projects/iot-air-pollution-monitoring-using-arduino
4. Https://www.iijser.org
5. Https://www.irjet.net
6. https://www.researchgate.net/publication/324562516_An_IoT_Based_Low_Cost_Air_Pollution_Monitoring_System
7. https://www.researchgate.net/publication/328015436_A_Smart_Air_Pollution_Monitoring_System
8. Https://acadpubl.eu

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