



IOT BASED AIR AND SOUND POLLUTION MONITORING AND RAINFALL DETECTION SYSTEM

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ABSTRACT:

Due to excessive decibel levels and lethal chemicals that are naturally occurring in the environment, air and pollution in major cities are now daily important issues that require specific care. Hence, in order to ensure a healthy way of life and a better future, it is currently important to limit pollution (both air and noise). In this study, a good implementation of the internet of things is used to monitor environmental factors such as air pollution and noise pollution. Because of the high decibels and harmful gases present in the earth that directly affect human well-being and as a result demand for an unusual level of concern, air and pollution problems now occur every day in metropolitan areas. In this way, it has finally come to light. In this work, a powerful application of the internet of things is used for perceiving air quality conditions including noise and pollution. This essay illustrates an applied design for a flexible, flexible, and cost-effective method of evaluating the air and sound quality of a chosen website. This framework suggests a noise and air quality-related perceptual framework that enables us to monitor and assess real-time sound and air quality in a specific area using IoT. Framework makes use of air sensors to measure the distance of dangerous gas mixtures that are visible all around and frequently relay this information.

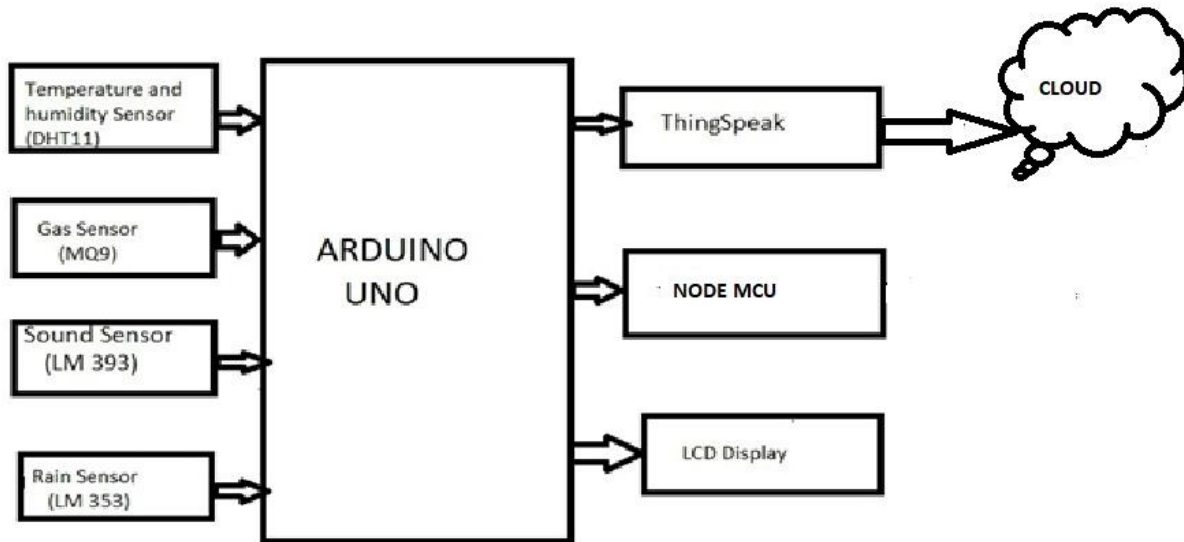
Keywords: Internet of Things (IoT), Sensors, Arduino, rain detection System

[1] INTRODUCTION

These days, air and sound pollution is a major problem. For a better future and everyone's health, it is essential to monitor and manage air quality. Here, we suggest an IOT-based air quality and sound pollution monitoring system that enables real-time monitoring and analysis of both in specific locations. The system continuously transmits data to the microcontroller using air sensors to detect the presence of dangerous gases and compounds in the air. The technology also continuously measures sound level and transmits that information via IOT to an online server. The sensors communicate with the microcontroller, which then analyses and sends the data via the internet. This enables officials to keep an eye on local air quality and

[2] LITERATURE SURVEY

| Sr. No. | Title | Author | Abstract |
|----------------|---|---|---|
| 1 | AIRQ: A smart IOT platform for air quality monitoring Published in: 2020 IEEE 17th Annual Consumer Communications & Networking Conference (CCNC), INSPEC Accession Number: 19488909 , Published: 26 march 2020 | Vishal Choudhary, Jun Hao Teh, Victoria Beltran, Hock Beng Lim. | In many places across the world, urban air pollution is a significant issue. The AirQ platform is a clever and economical way to measure air quality. The AirQ device offers real-time and location-specific air quality data and is inexpensive and portable. |
| 2 | Design and Implementation of Portable Sensory System for Air Pollution monitMicroelectronics Lab(meLAB), School ofEngineering, University of Glas- gow, G12 8QQ, U Published :January 2019 | Xuan Zhao, Siming Zuo, Rami Ghannam, Qammer H. Abbasi and Hadi Heidari Microelectronics Lab (meLAB),SchoolofEngineering, UniversityofGlas-gow,G128QQ | The design and construction of a portable sensory system for air pollution monitoring that can measure temperature, humidity, and particle matter (PM) are the main topics of this pap |
| 3 | An Efficient Tracking System for Air and Sound Pollution using IoT IEEE, Published: 23 April 2020 | K.Cornelius1,N.KomalKumar2 , SagarPradhan3 , PriyeshPatel4 N. | We have designed an air quality and sound contamination surveillance system that enables us to monitor and check real-time air peculiarity as well as sound contamination in a specific area using the most recent IoT technology. It is crucial to examine the air quality and sound level and put them under control for a good future and a full life for everyone. |
| 4 | Integrated Pollution Monitoring System for Smart City”, IEEE Published :December 2016 | Baihaqi Siregar | Dust particle density in the air, humidity, light intensity, and sound level are a few factors that change when there is pollution. Wireless sensor networks (WSNs) are a technology that can be used to create an integrated pollution monitoring system. These networks connect various sensors, such as dust sensors, to devices that were designed to support smart cities. |
| 5 | Four-Layer Wrist Worn Device for Sound level and Hazardous Gases Environmental Monitoring IEEE, Published: February 2018 | Mostafa Haghi, Kerstin Thuro | In especially for those who are exposed for a long period of time, chronic diseases like asthma and mental health disorders like anxiety may be brought on by human exposure to environmental hazards like air pollution and high sound levels. In this article, we introduce the "MLMS-EMGN4.0" gadget, which may be worn around the wrist and measures a number of physical and chemical environmental factors, as well as motion tracking. |
| 6 | Noise Pollution & Human Health: A Review , IEEE ,Published: March 2017 | Hiral Jariwala ,Huma S Syed ,Minarva J Pandya , Yogesh M Gajera | Cities all across the world struggle with a serious problem of noise pollution. Unwanted sound is referred to as noise. Environmental noise includes all undesirable sounds that we hear in our neighbourhoods, excluding those that come from the workplace. Health and wellbeing are at risk from environmental noise pollution, which is a type of air pollution. Because of urbanisation, population growth, and the consequent rise in the usage of increasingly potent, diverse, and highly mobile sources of noise, it is now more severe and pervasive than ever before, and it will only become worse. |

[3] BLOCK DIAGRAM**[4] SPECIFICATION****HARDWARE REQUIRED**

- Arduino Uno
- MQ-135 Sensor
- Sound Sensor
- Rain Sensor
- DHT 11 Sensor
- LCD Display
- GSM

SOFTWARE REQUIRED

- Proteus
- ARDUINO IDE
- ThingSpeak

[5] OBJECTIVES

- To sense the parameters like air, sound and rainfall in order to constantly transmit the data.
- To sense the Temperature and humidity conditions using DHT 11 sensor.
- To design a system that also keeps measuring sound level and report it.
- To display the message on display board though GSM.
- To receive and transmit data effectively via GSM.
- To eliminate the need of being physically present.
- To detect the rainfall using the rain sensor and alert the authority.

[6] CONCLUSION

Determining the number of stations and their locations while taking objectives, costs, and available resources into consideration are the main components of the design of the air and sound quality monitoring network. An expert system should be created to fix the precise number and distribution of sensor monitoring locations in order to aid an industrialist.

[7] ACKNOWLEDGEMENT

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[8] REFERENCES

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