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Air Pollution Monitoring and Controlling System

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Abstract - The amount of air pollution continues to increase due to factors such as population growth, increased traffic, industrialization, and urbanization, thus directly affecting the health of people exposed to hazardous substances, causing hazardous substances to harm human health. To realize this design, we will make an IoT-based weather monitoring system in which we will use the internet to monitor the air quality of Pall garage and send alerts when the air quality drops beyond an area, meaning there is enough cost.

Hazardous substances such as carbon dioxide, carbon dioxide, alcohol, benzene, and ammonia in the air.

It will show the weather quality in PPM on TV and mobile operation so that we can work effectively. In this IoT design, you can turn off pollution from anywhere using your computer or mobile phone. Therefore, poor air quality can cause many health problems such as heart disease, lung cancer, and respiratory diseases.

The current need is not only to control pollution, but also to use technology, ethics, and software technology to control pollution quickly. This article is dedicated to the creation of a similar system that monitors the weather in real-time to ensure that we stay safe and live a good life.

Key Words: Air Quality Monitoring, Sensor Networks, Data Analytics, Pollutant Detection, Environmental Monitoring

1.INTRODUCTION

Climate change increasingly affects human life, social security and economic development. In addition, population growth, rapid industrialization and the use of chemical fertilizers and pesticides in agriculture have caused great effects on the environment, cloudy weather and public health. Air pollution has decreased, especially in cities where there are many people and there are many commercial areas.

The World Health Organization (WHO) reported that approximately 4.2 million premature deaths

worldwide are due to air pollution. Therefore, poor air quality can cause many health problems such as heart diseases, lung cancer, and respiratory diseases. The need now is not only to control pollution, but also to make electronic equipment, equipment and software that will enable rapid control of pollution. This article is dedicated to the creation of such a system that monitors the

weather in real time to ensure that we stay safe and live a good life.

Parks, factories, school laboratories, etc. The use of air conditioning equipment is important for areas where the risk of air pollution that directly affects human health is high, such as The aim of this study

is to develop and implement an affordable weather monitoring system in an area of several kilometers radius. Monitor AQI values published on public websites for early warning and prevention.

2. Body of Paper

Air pollution in large populations has a significant impact on people and lands. Environmental problems are increasing rapidly in India. Air pollution, mostly caused by traffic and work, can cause various respiratory diseases such as asthma and sinusitis. Cosmopolitan cities like Kolkata, Delhi and Mumbai suffer from poor air quality due to high carbon dioxide (CO2) emissions from vehicles, heavy labor and other hazardous holidays. The literature describes a number of low-cost, low-emission systems that can be transported by humans or electric vehicles. In two studies, Peterová, Hybler and Bhatt et al. He introduced an environmentalism that aroused public interest and sympathy for pollution. Exposure Sense is a collaborative framework for predicting daily operations. In another study, Zheng et al. A forecaster that uses sensing information to find good weather data is proposed. Data is collected from stations in various locations. The system uses mobile visitors for services. Lee et al. Android functionality is in demand to

provide quality weather information to Concrete. In the operation carried out by combining the data in the user area with the city's air quality data transmitted from the stations, it is planned to inform the occupants of the building about pollution every day, ensuring daily and uninterrupted monitoring. Reich et al. It has developed a wireless sensor network platform called VehNode that can be used on buses to locate emissions from vehicles. Mujawal et al. An example of weather forecasting using WSN in Solapur city is given. Microsensor protrusions characterize the target gas by measuring the conductivity of the imaging layer. When food comes into contact with the front of the sensor, it is assimilated and the conductivity changes. Solid-state sensors are also used in vehicles to detect the location of insects and transmit this location to a microcontroller. In another study, De Nazelle et al. To demonstrate ways to achieve an environmental vision that renews the power of self-awareness and compassion towards pollution. "Pollution is a serious problem that harms people's health, damages natural resources and physical capital, and

limits income growth. We hope this article will translate the cost of premature deaths into meaningful messages that will engage policymakers so that more money is spent on improving air quality. By supporting global urban health and investing in clean energy, we can reduce migration, slow climate change, and, most importantly, save lives," said Laura Tucker, World Bank Vice President for

Sustainability," said IHME Director Dr. Chris Murray. "Of all the problems we humans have, it is about premature death." There is an area where it is. There is little control over the air they breathe.

Policymakers in healthcare and regional offices, as well as leaders in many sectors, are facing a growing need and hoping to address it. "

At the first occurrence of an acronym, spell it out followed by the acronym in parentheses, e.g., charge-coupled diode (CCD).

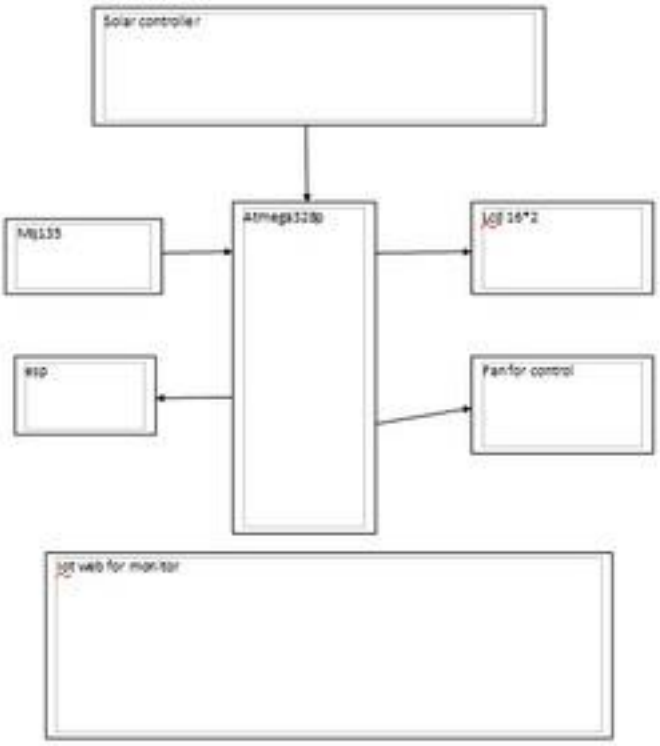

Fig -1: Figure

At the top of the block diagram are the electronics, the Arduino uno controller, and the MQ123. The fuel sensor connects to the vehicle's engine and then monitors the vehicle's area for pollution. This sensor is connected to the analog pins of the Arduino UNO. The controller performs the key measurement and sends it to the room server and mobile application. Mobile apps help people monitor the weather. Increase transmission, room proximity, control personnel, and traffic personnel. The system is designed to protect people from bad weather conditions. We developed this air pollution device to help people search, monitor and measure the air in private areas in order to reduce air pollution in these areas and protect people and the environment from pollution.

First of all, we connect ESP8266 to Arduino. ESP8266 works with 3.3V, if you give 5V from Arduino it will not work properly and may be damaged. Connect VCC and CH_PD to Arduino 3.3V pins. The RX pin of ESP8266 operates at 3.3V and does not communicate with Arduino when we connect it directly to Arduino. So we need to make a voltage divider to convert 5V to 3.3V. This can be done by connecting three resistors in series as we did in the circuit. Connect the TX pin of ESP8266 to pin 10 of Arduino and the RX pin of esp8266 to pin 9 of Arduino through a resistor.

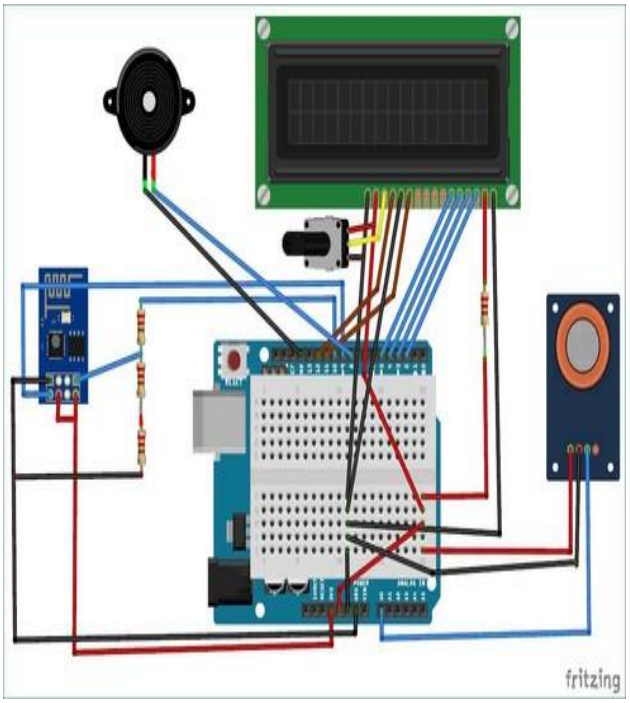

Fig -2: Figure

ESP8266 Wi-Fi module allows your project to access Wi-Fi or the Internet. This is a very cheap tool and your plans will be very powerful. It can interface with any microcontroller and is an important tool in IoT platforms. For more information on using ESP8266 with Arduino, see here.

Then we connect the MQ135 sensor to Arduino. Connect the VCC and ground terminals of the sensor to 5V and the Arduino ground and analog pins of the sensor to Arduino A0. Once the conditions are correct, connect regulator 8 to the Arduino. Finally, we connect the LCD to Arduino. The connections of the LCD are as follows

• Connect pin 1 (VEE) to ground.

• Connect pin 2 (VDD or VCC) to 5V.

• Connect 3K (V0) to the middle pin of the LCD.

Turn on the 10K potentiometer and connect both ends of the potentiometer to VCC and GND. The potentiometer is used to adjust the contrast of the LCD screen. Potentiometer values above 10K will also work.

• Connect pin 4 (RS) to pin 12 on the Arduino.

• Connect pin 5 (read/write) to ground on the Arduino. Since this pin is not used very often, we connect it to ground.

• Connect pin 6 (E) to pin 11 of Arduino. RS and E components are control devices used to transmit data and signals.

• The other four pins are data points used to communicate with Arduino. Connect pin 11 (D4) to pin 5 of the Arduino.

Connect 12 (D5) to pin 4 of the Arduino. Connect pin 13 (D6) to pin 3 of Arduino. Connect pin 14 (D7) to Arduino pin 2.

• Connect pin 15 to VCC through a 220 ohm resistor. This resistor will be used to adjust the brightness of the lamp. The higher the value, the darker the light.

• Connect pin 16 to ground.

3. CONCLUSIONS

To reduce pollution from such places and protect people and the environment from pollution, these pollution devices are designed to help people search, monitor, and measure the air in specific areas.

Early infection is not necessary. But now economic development, the automobile industry, chemical industry, etc. Pollution is increasing due to many factors such as. Therefore, in order to reduce

pollution from such places and protect people and the environment from pollution, these pollution devices

are designed to help people search, monitor, and test air pollution in an area. The device is integrated with the mobile application IoT-Mobair to help users estimate pollution in any form.

Additionally, information data can be used to estimate the AQI level. Air quality monitoring equipment is planned with an integrated mobile application that can help people with respiratory diseases. The app includes a city-specific air quality index that displays specific areas based on climate and air quality measurements, using time calculation for different energy production recommendations, daily air quality, duration of outdoor activities, and cloudy bad weather related to health risks. report generation.

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