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POLLUTION CATCHER

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Abstract - *The present significant condition and open issue is air contamination and noise pollution. As indicated by the report of World Health Organization (WHO), air and clamor sullying is noteworthy hazard factor for various wellbeing conditions including skin and eye disease, disturbance of nose, throat torment and cerebral agony. It likewise causes genuine conditions like coronary sickness, lung dangerous development inconvenience in breathing and many. India being the world's fourth biggest producer of CO2, it is essential to comprehend what the country\'s emanations are right now and where they may be going. So one of the main reason is increase in automobile vehicle which ends up in a rise in air and noise pollution, since automobiles area unit is the main source of environmental pollution. The fundamental target of our task is to screen the noise and air levels of vehicles using various sensors, GSM/GPRS and cloud servers. Using the cloud server we can update the information and can create awareness among the public about pollution levels. Smoke absorber unit absorbs harmful gases from the environment and condenses the gases into liquid form.*

Key Words: (Size 10 & Bold) Key word1, Key word2, Key word3, etc (Minimum 5 to 8 key words)…

1. INTRODUCTION

The present one of the main community well being & ecological worry is air contamination and noise pollution.. Presently a day in urban communities' noise and air contamination becomes genuine issues [2]. Presenting to the 2014 investigation of World Wellbeing Association (WHO), inferable from air contamination in 2012 is the explanation behind the passing's of around 7 million individuals globally. It too causes thoughtful conditions like Respiratory Diseases, Cardiovascular Sickness, lung malignant growth, pneumonia, trouble in breathing and some more. Air contamination is important risk factor for various wellbeing conditions including skin and eye infection, aggravation of nose, throat & eyes [2]. Noise pollution is caused due to unwanted sound which is commonly produced inside several industrial facilities and some other workshops, but it also comes from road, railway, and airplane traffic and from out side building activities. The fundamental point of IOT Air and Sound Checking Framework is that the Air and sound contamination is a rising issue now a days. It is fundamental to screen air quality and monitor it for a superior future and solid living for all. In this we propose an air quality and sound contamination observing framework which is utilized to screen and check live air quality and sound contamination in a zone utilizing IOT [4]. This system will be installed at different places in the city or any urban area such as hospitals, highways, campus, streets, parks, homes and malls, etc. Sensors continuously detects the level of air or sound pollution and result will be updated. On the off chance that the air and commotion contamination goes beyond the prefixed value, then a beep sound will be generated indicating the pollution. All the data about the pollution will be updated in the cloud so that anyone can know the amount of pollution in their area [8]. Smoke absorber is a device with mechanical fan. It is used to extract and to emit the harmful smoke and the fumes from the surroundings and making them to pass through the pipe and dump the polluted air into the sewage water which can be purified further. There by saving us from inhaling those polluted air.

2. OBJECTIVES

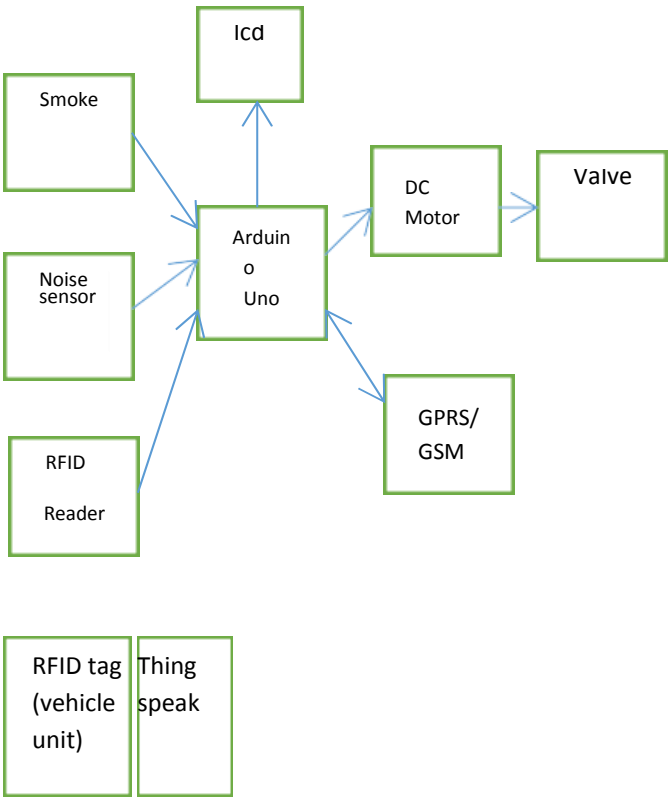
To construct a pollution catcher system which gives necessary information.

- It used to monitor continuously the pollution creating by noise.
- It monitors air pollutants level in the vehicles.
- It monitors the pollutants range and message will be sent and values are uploaded to the cloud.
- Provides the details regarding vehicle such as vehicle ID, DL by using the concept of RFID.
- Smoke absorber unit absorbs harmful gases from the environment and condenses the gases into liquid form.

3. METHODOLOGY

The main control unit of this project is microcontroller. The microcontroller is controlled by the program init which helps the microcontroller to take required action based upon the input and produce the required output. All the devices are initialized, LCD, GSM/GPRS, smoke sensor, noise sensor and RFID reader and tag. The system starts with a touch of RFID card. The whole project is demonstrated with the help of LCD display. Noise sensor and smoke sensors are embedded in our system to detect the level of noise and smoke. With the help of IOT the values are updated to the cloud. When the motor is turned on it checks the noise and smoke level. The sensors value are monitored and uploaded to cloud via GPRS. The pollution level can be read by public at any time using internet. The Smoke absorber unit absorbs harmful gases from the environment and condenses the gases into liquid form so that the pollution can be reduced.

4. BLOCK DIAGRAM



5. HARDWARE AND SOFTWARE REQUIREMENTS

ARDUINO UNO

Arduino Uno is an Open source stage which suggests the sheet, which is used for the easy accessibility of the programs so that programmer can make alterations and for better functionality. Arduino uno is a microcontroller board designed by Arduino.cc and based on Atmega328.

LCD (16X2)

The Liquid Crystal Display (LCD) is a electronically modulated optical device which is used to control the display and presenting the visuals.

SOUND SENSOR

LM393 sound detection sensor is utilized to measure sound intensity with the motive to monitor sound pollution in an area.

RFID READER AND TAG

A Radio Frequency Identification is used to transfer the data and uniquely identifies and tracks the inventory. Radio transmitters and receivers sends signal to RFID tag to read the response.

NOISE SENSOR

Noise sensor is able to record noise levels, due to its integrated microphone. It is able to analyze the surrounding ambient sound in the audible frequency spectrum for the human ear, showing collected data in dBA

GSM

GSM means Global System for Mobile Communications in the past called as Group Unique Mobile.GSM is used to establish communication between mobile device and GPRS system.

DC MOTOR

DC Motor is a class of rotary electrical motor that changes Direct current Electrical energy into mechanical into Mechanical energy.

RELAY

Relay is a switch which opens & closes the circuits electrically or electromechanically. Relay controls the circuits by open and close of the contacts in additional circuit.

POWER SUPPLY

Power Supply is an electrical device which converts electric current from a source to the proper Voltage, Current and Frequency to power the Load.

SMOKE ABSORBER

Smoke absorber is actually a device with mechanical fan. It is used to emit the harmful smoke

ARDUINO IDE

Arduino Integrated Development Environment i.e, Arduino Software (IDE) is a open source and makes it easy to write the code and uploading code to the cloud.

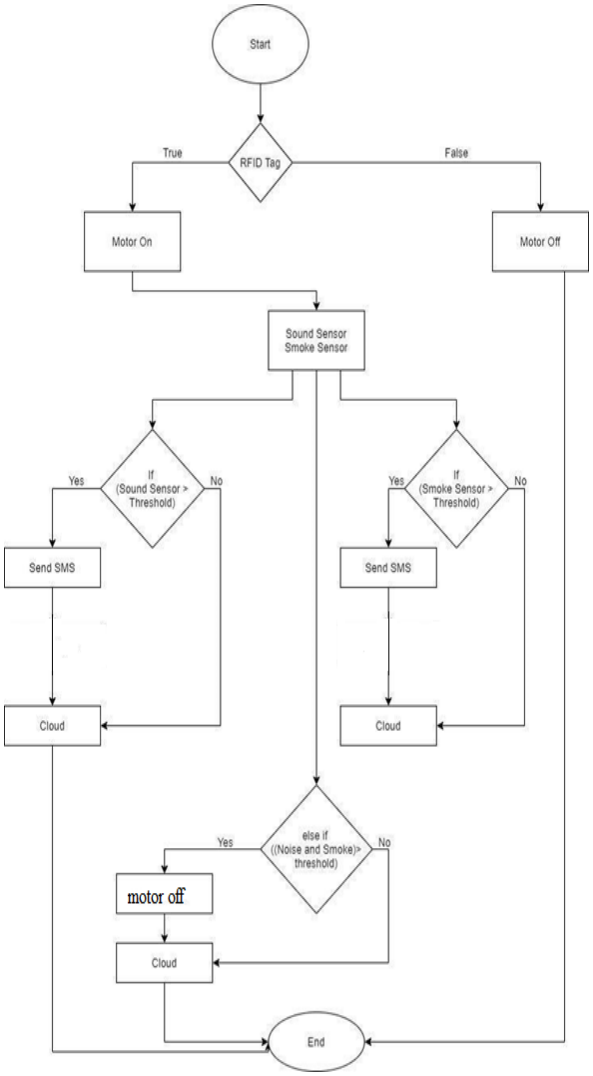
THING SPEAK

Thing Speak is a open IoT platform which allows us to observes and tests the live Information Streams in Thing Speak Cloud. The user can transfer information to Thing Speak from your mobile devices.

ANDROID

Android is a Operating system which supports large number of applications in Mobile devices . Android is based on the Modified Version of Linux. It is developed by Google.

6. FLOWCHART



7. RESULTS AND DISCUSSIONS

- **Information about pollution in different areas:**

This system reduces the amount of air and commotion contamination in highly traffic areas and industrial zones. It continuously monitors the air and clamor contamination and updates to the cloud. The public can view the pollution level in the different areas through their android Phones.

- **Vehicle Condition:**

This project also gives information about the amount of harmful gases released by the exhaust valve and amount of noise produced by the vehicle while running and sends an alert message to the owner of the vehicle to service the vehicle. Hence also maintains vehicle in safe condition.

- **Details of the Vehicles:**

RFID Reader gives information regarding vehicle ID and insurance.

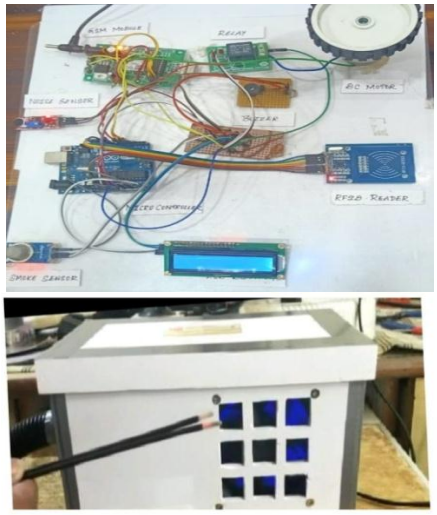


Figure 5.1 Project Model

8. APPLICATIONS

- This framework is mainly usefull in different industrial regions where air contamination is more..
- It reduces the measure of air and commotion contamination in nature.
- Smoke absorbing units is used in the heavy traffic areas, absorbs the harmful gases exhausted by vehicles from the environment.
- The pollutants and harmful gases which are absorbed by the smoke absorber are compressed and condensed to liquid form, leaves into the sewage.

9. CONCLUSIONS

The endeavor is arranged using sorted out showing and can give the perfect results. It will in general be adequately realized as a Persistent structure with explicit modifications.

Science is discovering or creating significant advancement in different fields, and henceforth advancement keeps changing from time to time. Going further, a huge part of the units can be made on a lone close by microcontroller likewise making the system insignificant in this way making the current structure dynamically convincing. To make the system relevant for continuous purposes sections with increasingly important range ought to be executed.

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