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Air quality identification through Internet of thing

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Abstract: **Now a day's revolution of the factories and some other cases total air and water will be polluted. Pollution of air is very harmful for human body. At the railway station and bus station and school and some places like many people's gathering areas pollution will attacked. It will be effect on the all the peoples. Unknown these peoples are suffering with some disease and then those are died. In this paper, we proposed a small physical object in this small object connected with Internet connected object(ICO). Physical object is measured the quality of the air. And then gather the information will be send to the related offices. Through the Internet connected object. And then those are protecting the area. And also alerted which are the areas are more polluted try to avoid that areas otherwise those are definitely go try protect them self.**

***Index terms*- IoT, smart phone, RFID.**

I. INTRODUCTION

Internet of things is a interaction between the things that consists of sensors and human. The main concept of the IoT is to allow things to be connected any time, any place with anything and any one, and any network and any service. By developing this we need a common operating platform that is middle ware. The middle ware platform enables sensor data collection, processing and analysis. Presently we design and implementation details of our proposed middle-ware solution namely mobile sensor data processing engine (MOSDEN). MOSDEN is designed to support sensing as a service model natively. MOSDEN is a true zero programming middle ware. That means user do not need to write program code this MOSDEN middle ware is used for push and pull data streaming. For data transaction between android mobile and sensors we can develop a special plug-in that is used for the better communication between the sensor and human.

II. BASIC INFORMATION ABOUT IOT WORK

in this section, we briefly discuss the background and our motivation behind this work.By using IoT we can connect to billions of thing to the Internet. This method is not possible and practical to connect all of them to the Internet directly. This is mainly due to resource constraints (ex. network, communication capabilities and energy limitations) connecting directly to the Internet is expensive in term of computation bandwidth usage and hardware cast point of view. Enabling persistent Internet access is challenging and also negatively impacts on miniaturization and energy consumption of the sensor. Due to such difficulties, IoT solution needs to utilize different type of devices with different resource limitation and capability.

We believe that an ideal IoT middle ware solution should be able to take advantage and adapt to these different type of devices in order to make the solution more efficient and effective. One of the most critical decision that need to be taken in the domain of IoT is where and when to process the collected data.

Without IoT:

Fig 1: Polluted areas

fig 1 is representation for the how to pollution occur in our society .present do to the different reasons air pollution will be increased but this fully effect on the human life. Air pollution find out equipments are present days very rare because its rate is very high do to the sudden changes in the body reason common man will be find out the this area will be polluted . So now a days there is rare equipment for find out the air pollution that reasons so Meany peoples are suffer for adapting the environment change. Or very difficult to live the polluted areas. Pollution control officer also suffer for to find out which area will be more pollution.

That's reason these are not concentrate the polluted areas present days NO2, SH2 and CO, CO2, hydrocarbons and methane (CH2) gases are very harmful for the human body.

with IoT:

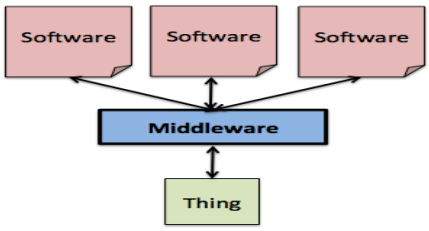

Fig3: Architect of IoT

Fig2: Air quality sensor

Fig2 is air quality Major the physical equipment by using this equipment we can easy to find out the air pollution in our society. In this physical equipment is send the signal in the digital format. By using the digital signal we easy to find out how much of percent pollution will be there.

air pollution find out areas is very difficult to find out because it's find out equipment coast is very high . And also it is not flexible for all areas but air pollution is major problem in the now a days .

Mainly NO2,SH2,CO,CO2,hydrocarbons,methane(CH2) is gases are more harmful the human so we are proposed method is a small object is fixed at the different places like bus station and railway station and etc.. more population presented areas. That is gases sensor that is find out the gases changes in environment it is easy to find out the increased the harmful gases ratio ex: NO2, SH2, CO, CO2, hydrocarbon, methane (CH2) through the GSN (global sensor network) will be send the data to the pollution control offices and also it is alert to the near peoples through the sound alarm. We can also add the showing in the digital representation.

III. IMPLEMENTATION:

in this paper implementation we are taken the some physical objects that are arduino uno board for receiving in the environment air quality states and smart phone or android phone for receive the signal from sensor and also additionally we can take Ethernet shield .

Ethernet shield is helpful for the known the information from different areas.

A small physical object will be attached at the places of chase to polluted areas. That chip is useful to find out the level of the air pollution that information will be send to the related offices and also show them. We also show at the places of polluted area and also we can alert to the near peoples at more pollution occur using bell.

Now comes to the programming side implementation. In this paper is implementing on the android platform because this program run on the smart phone. So defiantly we are developing the program in the android platform.

In this paper smart phone will be send the signal to the arduino uno chip in this chip in side one web server is presented and it have the capabilities to receive the signals request.

By using the IP(Internet protocols) address of the chip programming will be developed. sensor send the HTTP request in JSON(Java server on net) format signal will be send chip inside server will be receiving that signal and chip server will be work on the given states of bell. In this signal will be send on HTTP protocols format and this program will be run on the web server.

In this chip inside server is presented that is useful for the identification of air quality. In side server process the some information and then find out the air quality.

IV. RESULTS AND DISCUSSIONS:

Fig4: Display about air pollution

In this above figure we can easily analysis what is the process is going on and how it is used total representation in the fig 3. It is very easy processing to control the pollution from in our society. Hear no suffering about this area is polluted or not because all areas are display like this by using the small physical object. In this technology is very useful for traveling persons.

Controlling in the one smart phone that is also one application. This is very useful to operate the different sensors controlling in this page. No need tension about the IoT basics etc... It can understand the uneducated peoples also.

Fig5: simple figure representation for alerting

V. CONCLUSION:

We hope air pollution find out areas is very difficult to find out because it's find out equipment coast is very high. And also it is not flexible for all areas but air pollution is major problem in the now a days. Mainly NO2,SH2,CO,CO2,hydrocarbons,methane(CH2) is gases are more harmful the human so we are proposed method is a small object is fixed at the different places like bus station and railway station and etc.. More population presented areas. That is gases sensor that is find out the gases changes in environment it is easy to find out the increased the harmful gases ratio ex: NO2, SH2, CO, CO2, hydrocarbon, methane (CH2) through the GSN (global sensor network) will be send the data to the pollution control offices and also it is alert to the near peoples through the sound alarm. We can also add the showing in the digital representation.

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