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Pollution Monitoring and Controlling System for Smart Industry

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Abstract: *In this paper the usage of industries is increased in today's world as well as the industrial pollution has also increasing. There are various pollutions which are caused by industries like water pollution, air pollution and noise pollution. This paper provides solutions to industrial pollution. In textile industries dye waters are released into the river which causes water pollution to prevent that the project built a robust system which checks the PH level of the dye water if the ph level is high in the dye water then the water valve connected to the river will be closed automatically using IOT module. So that polluted water will not get mixed into the river. Likewise, the motors in the industry causes the noise pollution to the employees which leads to hearing problems to prevent that the project check the noise level using sensor if the motor noise increases above human audible level then using IOT system the light will be blink automatically and the alert will be sent to maintenance system. In the metal industry the metals are melted that releases carbon monoxide that causes the air pollution which affect the respiratory system of the employees by inhaling them so the project develop the robust method if the smoke level is sensed by the smoke sensor if the level is high then the exhauster fans will be turned on automatically by using the IOT system where the system will already be programmed. Hence our system will provide safety to the employees as well as to the environment and so pollution caused by the industries will be reduced.*

Keywords: *Pollutions, Industries, Chemical water, Human audible and Smoke level*

I. INTRODUCTION

Growth in wireless technology, improved microprocessors, and enhanced power support have all worked to make the dream of pervasive, interconnected “smart” devices a real possibility, and it is clear that the realm of the computer has now expanded far beyond the office and the desktop. With the new capabilities come new challenges for comp. Context-aware computing must grapple with the subtlety in human interactions. In most cases, physical context is inadequate to represent what humans truly perceive in our environment to interact with or within it. Much information exists that cannot be captured with sensors. Even the data that is currently collected by sensors can carry different meanings based on the activities engaged in. However, one usage that has not been much explored by context aware systems is application to pets. Content-aware pet tracking applications hold great potential.

First, the range of activities that pets engage in is much more limited than it is for humans. Many of the low-level activities that are recognized in existing comp application are also perfectly suitable for application to pets. An indoor dog or cat interact with fewer object, and the objects that interact with are often stationary. By dealing with a simplified notion of the context, a system built for pets can be much more successful in reducing the pet’s status and activities. Second, deployment systems on pet’s bypasses many of the privacy concerns that must be dealt with by systems deployed on humans. Lastly, there is a significant portion of the per owning population that deeply cares about the pet welfare. We see this application as a solution for those pet owners who would like to be aware of their pet’s activities when they are away from home. This system can also be used by pet owners to gain insights to the type of environment preferred by their pets.

II. RELATED WORK

This is untreated sewage, discharge into rivers that ultimately affects environment. Resources and adoption of technologies and practices that minimize environment impact. The intelligent ph sensor is stable, accurate and suitable for online monitoring in aqua culture.

Its architecture, Gas sensor and its features, Sound sensors and its specifications and ESP8266 Wi-Fi Model. Challenges on pollution monitoring using sensor networks are presented.

Capable to delivering the notification noise in audiovisual. This system monitors all of these results and finally when all data are collected, it sends the information or data to the cloud.

III. PROPOSED SYSTEM

In our proposed method the industrial pollution parameters are continuously sensed from different sensor, initially, to sense the different factors like Gas level, pH, temperature level, and noise. The output of sensors is an analog form, so controller needs ADC module. Which can convert analog signals from sensor to digital signals that is controller readable form. If anyone parameter exceeds its standard level, this information will send to control authority through IoT module. Another important step is these parameters can be monitor through internet by using Cloud.

IV. EXPERIMENTAL RESULTS & ANALYSIS

In chemical industries, the dye water is released into the river. If the ph level of water is above in base level then the valve will be locked. If the ph level of water is below in acidic level then the valve will be unlocked.



Figure 1. PH level is normal



Figure 2. PH level is abnormal

The industries that are having high gas level inside then ,exhausted fan will be switch on .The notification will be send to the mail and the application users.



Figure 3. Exhausted Fan

Inside the industries, if noise has been increased because of motor. Then the maintenance team will receive the alert light.

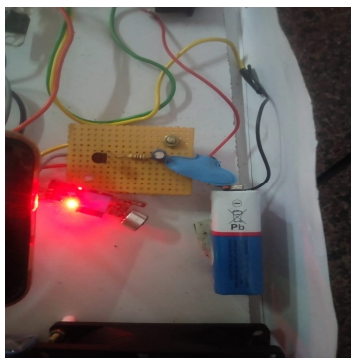


Figure 4. Alert light

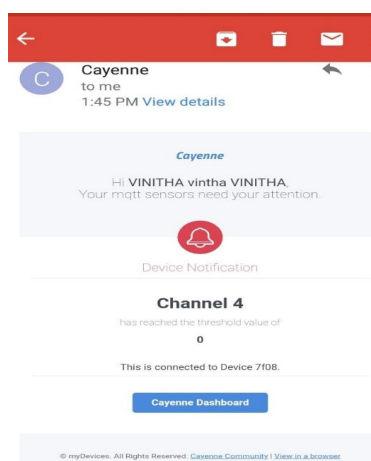


Figure 5. Mail Notification

V. CONCLUSIONS

It made with preplanning; thus, it provides flexibility in operation. Thus, a cost effective and user-friendly system has been developed to monitor the pollutants in the industry effectively. Thereby limiting the pollution in the environment. The field of pollution monitoring and control is very wide, and this project is an attempt to minimize the problem of cost and regular inspections by the utility of Internet of Things. For alleviating these problems, advanced IoT module with Cayenne server is used. The performance and robustness of the pollution monitoring and control system can further be improved by implementing sensors for controlling noise, gas, temperature, and other parameters, thereby improving the industrial and natural environment.

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