GARBAGE MONITORING SYSTEM FOR HEALTHY ENVIRONMENT BY USING SENSORS

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***ABSTRACT:** The main aim of the project is automatic notification to corporation in case over flow of garbage. In this project we are using GSM technology for convey the garbage level (over flow) information to server. Ultrasonic sensor is identify used to the Garbage level, load sensor identify the weight of the garbage and fire sensor identify any fire have been occur in the garbage.*

I. INTRODUCTION

Due to fleetly increase population growth, urbanization, developing countries because of this a lack of public awareness towards the waste management. The most important priorities are to ensure a clean and healthy globe and to protect the urban environment. Over a last few year, the operational cost for management of solid waste has increased gradually. The overall budget of solid management is 80-95% of expenditure is needed for the collection as well as transport of the solid waste. Specially, in the developing countries, not only waste monitoring but also management is becoming an acute problem for their urbanization and economic development. Solid waste monitoring and management authorities are being tried to find the solution which is preferable and also cost effective. The main factors found by researcher are like economical, technical and administrative those affect the municipal solid waste management challenges in developing countries. In public place, dustbins are being overflowed as well as the garbage spills out resulting in pollution. This also increases number of diseases as large number of insects as well as mosquitoes breed on it. Hence our problem statement is to design a system based on PIC controller as well as sensors are forming bin to give the bin data. Waste has been thrown inside the bin. Due to these sensors are used ` for collection and management of garbage. A healthy environment is necessary if we want to stay healthy. However, in today's fast paced life individuals scarcely have time to stop and configure things manually and hence the idea of automation is by and large broadly embraced. Either because of our fast paced life or because of our casual approach often small though critical things like cleanliness gets ignored. In big institutions or a city under a municipal corporation where there are extensive quantities of garbage bins deployed and workers are kept specifically for this task, the antiquated technique for physically hunting down filled garbage bins is wasteful and does not run well with the technological era we are in. Routine checks for cleaning the garbage bins which depend on time crevices are wasteful in light of the fact that a dustbin may get filled early or may get tampered and might require prompt consideration or there might not be any need of a routine check for a drawn out stretch of time. Likewise,

to save fuel and time and make the entire process more effective and convenient, the workers going on routine check should know the shortest route comprising of all the filled garbage bins. Several challenges exist in the design of such systems for a successful Smart City Implementation such as prolonging the battery life of sensor nodes, setting up the infrastructure for low powered M2M communication over longer distances (between a gateway and a distant central server), redesigning the WSN architecture pertaining to a particular Smart City Application etc. However, in this project we will discuss about how a sensor network of garbage bins could be connected to the Internet analysing the various integration approaches and also how Machine Learning techniques can be exploited to make the entire system more efficient.

II. RELATED WORKS

1. Distributed Transformer Monitoring System Based OnZigbee Technology   Rakesh   Kumar   Pandey,Dilip Kumar IJETT, MAY 2013
It is very difficult and expensive to construct the communication wires to monitor and control each distribution transformer station.   A DTRMS is developed and constructed, for monitor and record the parameters like temperature, oil level status, of a distribution transformer.
2. GSM Based Automated Embedded System for Monitoring and Controlling of Smart Grid   AmitSachan IJECEECE, 2013
It is difficult to monitor the load conditions of the Smartgridand temperature of the devices present in the Smartgrid. It acquire the remote electrical parameters like Voltage, Current, and Frequency from Smart grid and send these real time values over GSM network using GSM Modem/phone along with temperature at power station.
3. GSM based Distribution Transformer Monitoring System Ansuman Sharma, Rajesh Behura   May 2013
It is risk to monitor the distribution transformer parameters manually. It is used to monitor and record key parameters of a distribution transformer.
4. Transformer Health Condition Monitoring Through GSM Technology Vadirajacharya. K, Ashish Kharche, Harish Kulakarni,Vivek Landage IJSER, December 2012
Transformers are a vital part of the transmission and distribution system. Monitoring transformers for problems before they occur can pre-vent faults that are costly to repair and result in a loss of service.   Current   systems   can provide information about the state of a transformer, but are either offline or very expensive to implement.
5. GSM Based Distribution Transformer Monitoring And Controlling System Pathak.K Kolhe A.N Gagare J.T
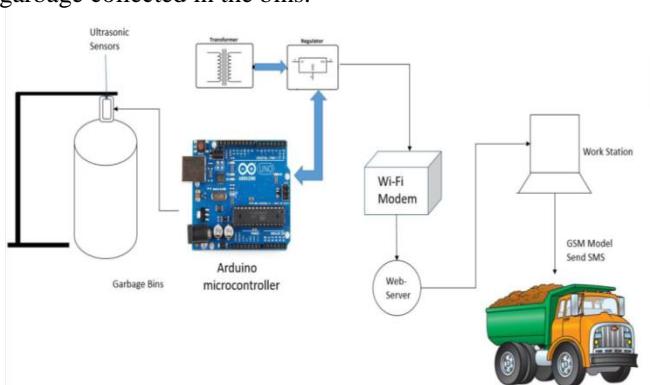
Khemnar S.MIJARIIE, 2016
Fault may occur due to sudden variation in load.It is a mobile embedded system used to monitor and record key parameters of a distribution transformer.

III. PROPOSED SYSTEM

In this system, we present a solution about the Smart Bin is a network of dustbins which integrates the idea of IoT with Wireless Sensor Networks. In big institutions or a city under a municipal corporation where there are extensive quantities of garbage bins deployed and workers are kept specifically for this task, the antiquated technique for physically hunting down filled garbage bins is wasteful and does not run well with the technological era we are in. Routine checks for cleaning the garbage bins which depend on time crevices are wasteful in light of the fact that a dustbin may get filled early or may get tampered and might require prompt consideration or there might not be any need of a routine check for a drawn out Stretch of time. In Modification Concept, it is designed to monitor the garbage. In this project we are using Ultrasonic sensor . In this, one ultrasonic sensor is attached with top of the garbage, the other ultrasonic sensor is fixed with bottom of the garbage. Both are used to monitor the garbage level like normal or overflow. The GSM module in the garbage is used to transfer the information to the central controller fixed in the server to Intimate Corporation. Ultrasonic sensor is used to detect the level of garbage. Garbage full notification intimated to corporation through ultrasonic sensor. Sensor will continuously watch whether the garbage was cleaned or not. If it was not cleaned notification will be send to higher authority people.
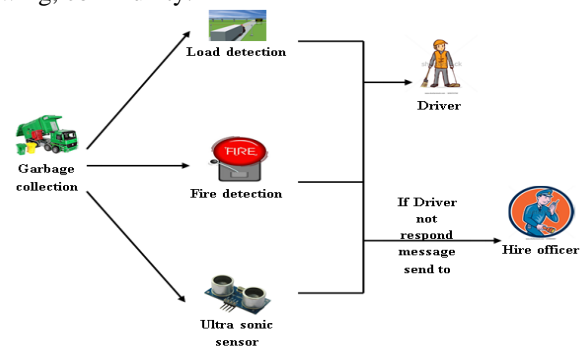
SYSTEM ARCHITECTURE
The IOT Garbage Monitoring system is a very innovative system which will help to keep the cities clean. This system monitors the garbage bins and informs about the level of garbage collected in the garbage bins via a web page. For this the system uses ultrasonic sensors placed over the bins to detect the garbage level and compare it with the garbage bins depth. The system makes use of Arduino family microcontroller, LCD screen, Wi-Fi modem for sending data and a buzzer. The system is powered by a 12V transformer. The LCD screen is used to display the status of the level of garbage collected in the bins.
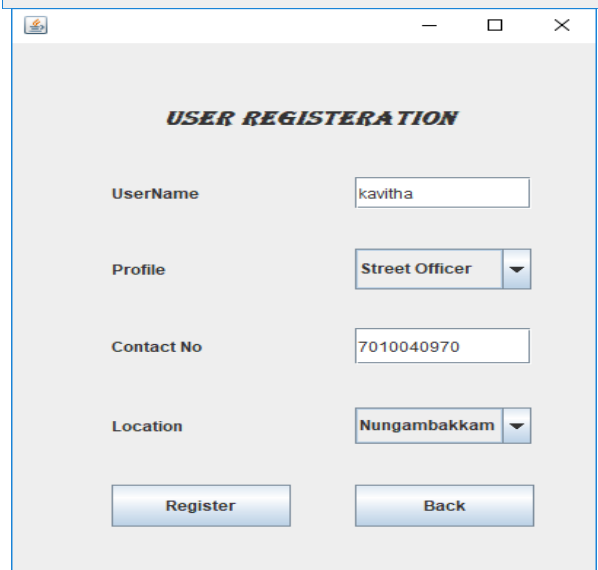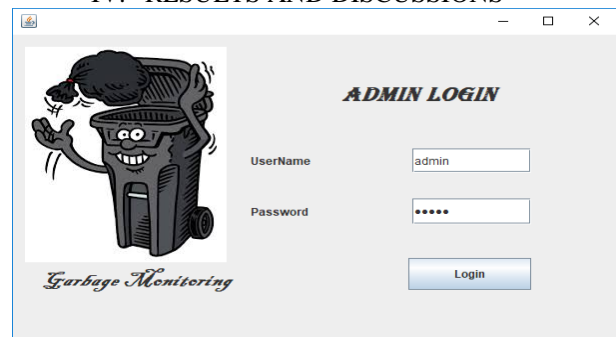

Whereas a web page is built to show the status to the user monitoring it. The web page gives a graphical view of the garbage bins and highlights the garbage collected in colour in order to show the level of garbage collected. LCD screen shows the status of the garbage level. The system puts on the buzzer when the level of garbage collected crosses the set limit. Thus this system helps to keep the city clean by informing about the garbage levels of the bins by providing graphical image of the bins via a web page. The ESP8266 Wi-Fi Module is a self-contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network. The ESP8266 is capable of either hosting an application or offloading all Wi-Fi networking functions from another application processor. Each ESP8266 module comes preprogramed with an AT command set firmware. ESP8266 module is an extremely cost effective board with a huge, and ever growing, community.

IV. RESULTS AND DISCUSSIONS

V. CONCLUSION

In this paper we have shown the integration of Wireless Sensor Network with the Internet of Things using the Stack based Front End method using a test bed of a network of Garbage Bins. We discussed the various integration approaches and discussed how the Stack based Front End approach is suitable for this particular application. Finally overflow of garbage means automatically notification is sent to corporation.As a scope of the future work we tend to implement the payment module in the entire monitoring system. We hope to develop an android application where the people will be able to access from their mobiles, two things mainly, the location of the nearest bin, and also whether it is full or empty. We also hope to put the entire

thing in cloud, sothat people from anywhere can check the status of the bins, and the limitation of constrained area is removed.

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