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Novel IoT and Android Application Based Garbage Monitoring System

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Abstract: ***Nowadays certain actions are taken to improve the level of cleanliness in the country. People are getting more active in doing all the things possible to clean their surroundings. Various movements are also started by the government to increase cleanliness. In the traditional system, the garbage is collected in a manual way. The workers who have to collect the garbage are unable to get proper information about the bins being full. Due to this sometimes the bins may be filled and overflowed and causes unhygienic conditions leading to pollution. A new model for Smart Garbage Monitoring is introduced with replacing the bins with smart bins attached to an ultrasonic sensor which will detect the total level of garbage inside it according to the total size of the bin. When the garbage will reach the maximum level, a notification will be sent to the corporation's office via an android application, then the employees can take further actions to empty the bin. This system will help in cleaning the city in a better way.***

KEYWORDS: Internet of Things (IoT) , , Ultrasonic sensor, Smart bin, SMS gateway.

I. INTRODUCTION

IoT or Internet Things refers to the network of connected physical objects that can communicate and exchange data among themselves without the desideratum of any human intervention. It has been formally defined as an “Infrastructure of Information Society” because IoT sanctions us to amass information from all kind of mediums such as humans, animals, conveyances, kitchen appliances. Thus, any object in the physical world which can be provided with an IP address to enable data transmission over a network can be made part of IoT system by embedding them with electronic hardware such as sensors, software and networking gear. IoT is different than Internet as in a way it transcends Internet connectivity by enabling everyday objects that utilizes embedded circuits to interact and communicate with each other utilizing the current Internet infrastructure.

In this paper, we are going to propose a system for the immediate cleaning of the dustbins. As dustbin is considered as a basic need to maintain the level of cleanliness in the city, so it is very important to clean all the dustbins as soon as they get filled. We will use ultrasonic sensors for this system. The sensor will be placed on top of bin which will help in sending the information to the office that the level of garbage has reached its maximum level. After this the bin should be emptied as soon as possible.

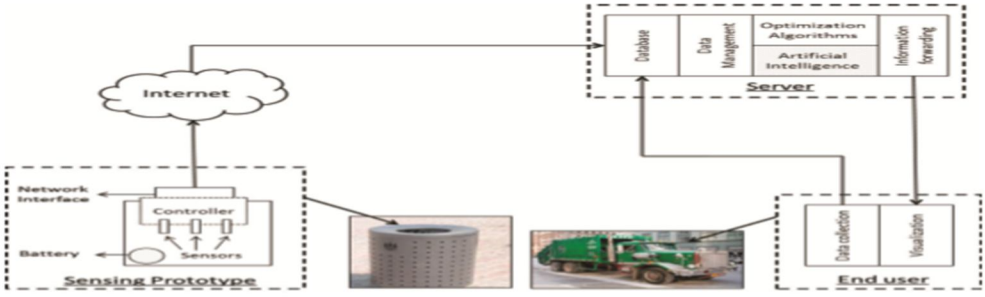
The concept of IoT when used in this field will result in a better environment for the people to live in. No more unsanitary conditions will be formed in the city.

II. PROBLEM STATEMENT

Cities generate lot of waste and aggregation of this unattended waste will cause serious health care problems. So a smart way of collecting this waste is needed, collection trips has to be applied which are optimistic and on demand.

III. PROPOSED SYSTEM

We propose a system based on three concepts Geographic information systems, graph theory and machine learning



The system has two important components

1) Smart Bin
2) Server

IV. BRIEF OUTLINE OF THE PROJECT

The works carried out at each project phase are outlined below:-

A. Learning & Analysis Phase

This phase includes

1) Gathering knowledge about existing communicating techniques.
2) Well understanding of the project design review from the client.
3) Learning tools, technologies & programming Language for coding purpose.

B. Design & Implementation

This phase Includes

1) Designing the overall functional view i.e. system architecture of the project.
2) Describing the language, platform used in the project implementation.
3) Identification and design of the modules for implementing.
4) Implementing the applications for accessing and controlling the different types of services.

C. Testing Phase

This phase includes

1) Writing the test cases for testing the implemented modules.
2) Executing the test cases manually, comparing and evaluating the actual result with the expected result.

V. CONCLUSION

We have reviewed the present answers for survey canister accumulation and recognized the open issues. Most arrangement were not proposing successful answer for gather the waste financially. Finally By implementing this SmartBin we can get, Waste Level detection inside the dustbin, Transmit the information wirelessly to concerned, The data can be accessed anytime and from anywhereThe real-time data transmission and access and Avoids the overflows of Dustbins

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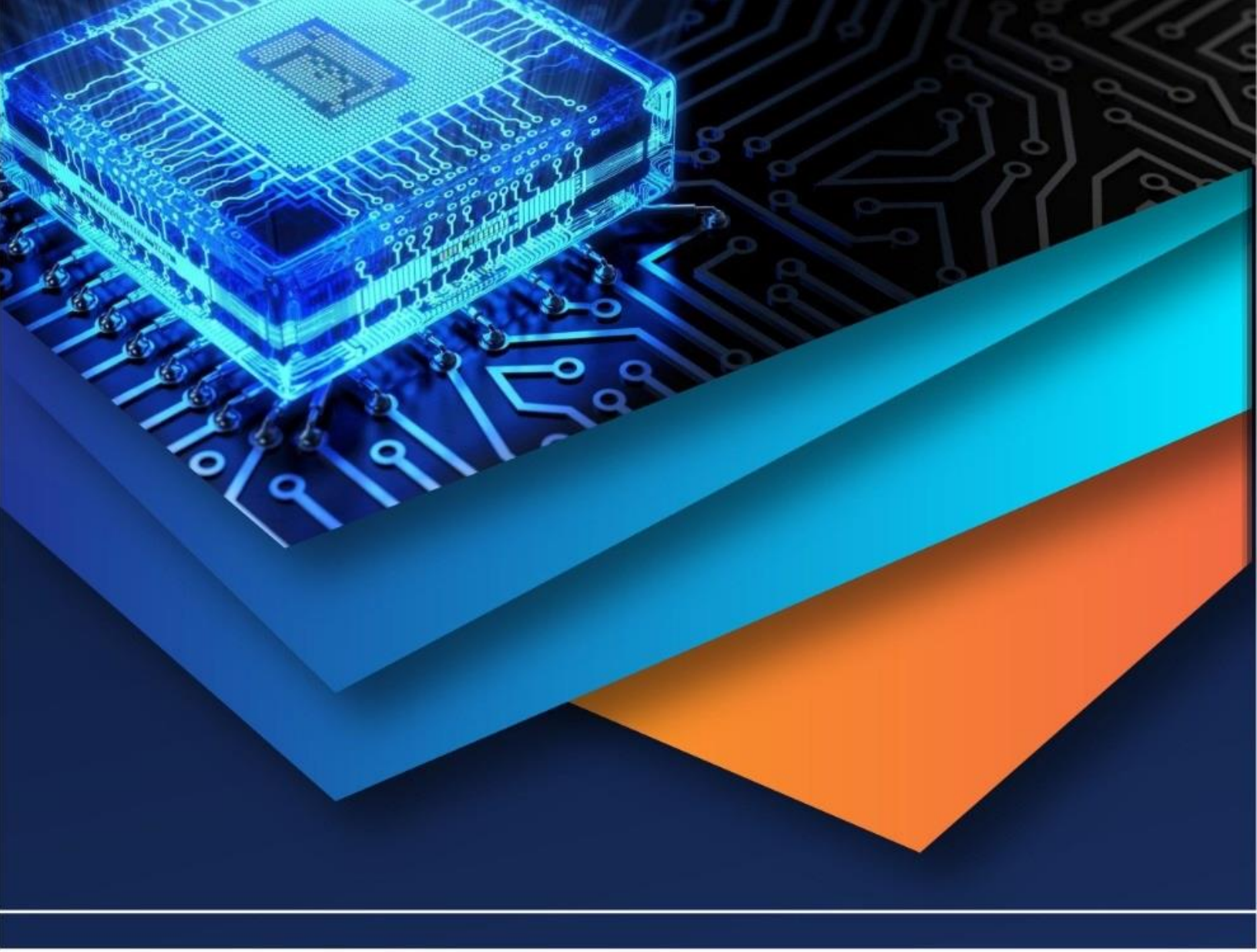

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