Smart Wastage Collection and Weight Monitoring System

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ABSTRACT: This project is 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 android app. In this project system track the driver and notify about nearest garbage bins based on level of garbage collection, also detect the level of driver truck based on that provide next garbage bin data. If driver gets off track then notify to the admin. This system not only used for tracking also used for monitoring the and help to keep city clean.

Keywords—IOT (Internet of Things)

I. INTRODUCTION

One of the main concerns with our environment has been solid waste management which in addition to disturbing the balance of the environment also has adverse effects on the health of the society. The detection, monitoring and management of waste is one of the primary problems of the present era. The process of making the things automatic is being exploited in almost all the major fields of life. Solid waste which is one of the sources and causes of environmental pollution has been defined under Resource Conservation and Recovery Act as any solid, semi-solid liquid or contained gaseous materials discarded from industrial, commercial, mining or agricultural operations and from community activities.

The type of wastes which constitute environmental pollution and which this work emphasizes on is domestic refuse consisting of degradable food wastes, leaves, dead animals and non-degradable ones such as plastics, bottles, nylon, medical and hospital wastes, generated in households, hospitals, industries and commercial centers. In other words, solid wastes may be defined as the organic and inorganic waste materials produced by various activities of the society and which have lost their value to the first user. To overcome this problem a new approach, IOT based garbage monitoring system is proposed.

This project 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 android app.

II. AIM

This Project Aims to make the weight collection more accurate and main officer to locate the garbage vehicle. It also provides the route for the vehicle and track it from admin office. Help to generate the soft report of the garbage.

III. OBJECTIVE

- To automate the garbage monitoring process of the overall collection process
- To Provide the level detection of garbage box
- To provide the route for vehicle and next garbage filled direction (if filled)
- To generate the report for daily garbage collection

IV. MOTIVATION

In existing garbage monitoring system, local governments manage garbage by deploying garbage bins and employing multiple pickup businesses for garbage collection. However, the existing garbage monitoring method is based on a flat rate, that is, a price structure that charges a single fixed fee, which causes environmental problems and increases waste discharge because there are no restrictions on heavy producers of food waste and no incentives for lighter producers.

V. LITERATURE SURVEY

This is not an original idea, for the implementation of smart garbage bin; the idea has existed for many years, After the IoT field finding its grip in our lives. This is, however an original plan for designing a smart garbage bin with weight sensor, IR sensor and Wi-Fi module for transmission of data.

[1]. **A State of the Art review on Internet of Things** by P. Suresh, Vijay. Daniel, R.H. Aswathy, Dr. V. Parthasarathy.

It gave the idea of IoT subject and addition details about IoT. The proper smart environment and various applications.

[2]. **City Garbage collection indicator using RF(Zigbee) and GSM technology**

This paper gave the details for the module required for the transmission of the data to the receiver side and also the main channel follow of the project. Initially we used GSM technology for our project but later on decided to us Wi-Fi module for the ease of data transmission.

[3]. **Smart Garbage Management System** by Vikrant Bhor, Pankaj Morajkar, Maheshwar Gurav, Dishant Pandya.

In, the proposed system describes that the level of garbage in the dustbins is detected with the help of Sensor systems, and communicated to the authorized control room through GSM system. Controller is used to interface the sensor system with GSM system. A android application is also developed to monitor the desired information related to the garbage for different selected locations. This will help to manage the garbage collection efficiently.

VI. EXISTING SYSTEM

The Exiting System was used to enter the weight manually on record book. The weight of the garbage was noted on the weighing machine made for vehicle therefore, needed calculation to subtract the machine weight with empty vehicle weight. The record was sent weekly, making this system less reliable. The record was not directly seen by the officers.

VII. PROPOSED SYSTEM

This system Detects the garbage, it also uses sensors like load cell sensors and IR sensors for measuring the leveling for garbage boxes. This all sensors are connected by the Arduino board. This board calculates the level by IR and load cell sensor and make the decision and send the calculated level to the server.

When the level is reached above the 75 % the System from server send the notification to all of he near garbage vehicle to collect the garbage box and makes to route map to their android app.

The admin watches the vehicle and checks if they are collecting the garbage and following the desired route. The admin also gets the details of weight and level of each garbage. The daily garbage report is also made available to them on request.
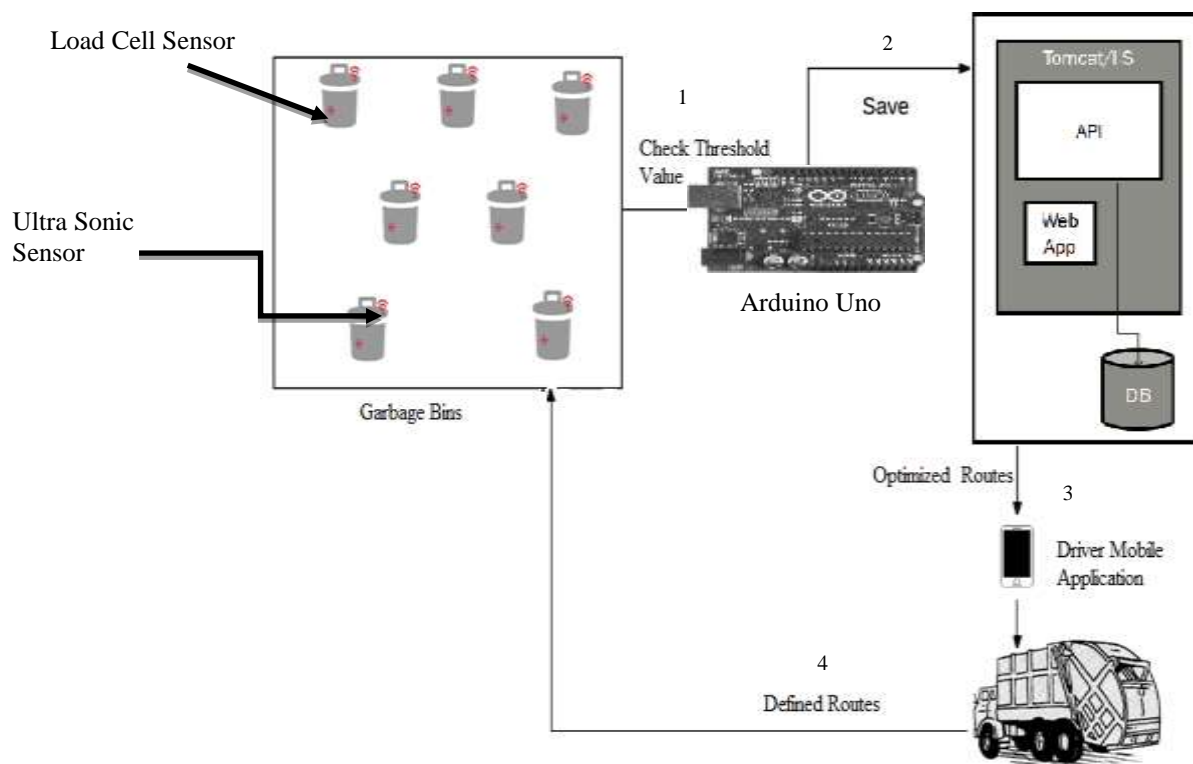
Figure 1: System Architecture

VIII. ADVANTAGES

Accurate weight measurement:

This system provides the actual measurement of the garbage box notify the driver to collect it if reached certain threshold value.

Navigation:

The navigation provides the route to filled garbage box from driver's location and also view the collection information to admin.

IX. CONCLUSION

Monitoring the fullness of bins during the utilization of sensors, it is probable to obtain a more efficient system than the current existing. Our plan of Smart waste administration system, mostly concentrate on Monitoring the waste administration, given a smart technology used for waste system, avoiding human interference, tumbling human time as well as effort also which outcome in healthy and waste ridden surroundings.

The proposed method for the monitoring of garbage is efficient and time saving process. This system can be implemented at any place with ease and within reasonable amount of time. The method would not only function for collecting and updating data automatically and timely, but also it could analyze and use data intelligently.

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