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SMART DUSTBIN SYSTEM WITH IN-BUILLT WI-FI

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Abstract

We recognize that waste is toxic to local habitats, and it is a danger to human life and plant life. We are going to introduce a project called IoT Dependent Smart Garbage to prevent all such scenarios. "When somebody dumps trash into a dustbin the bin ashes a unique code, which can be used to gain access to free Wi-Fi" The sensor tests that garbage fills or does not fill in the dustbin and the router provides users with Wi-Fi. Much of our project depends on the functioning of the Wi-Fi module, which is necessary for its implementation. The principal goal of this project is to improve the vision of a smart city.

Keywords: *Robotics, Sensors, Local and Wide-Area Networks Internet, Routers, Software Development Kit (SDK).*

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I. INTRODUCTION

Several times, we saw in our city that there was garbage in the dustbin [1]. In return for a cleaner surrounding with a specific initiative, it creates unhygienic conditions for individuals as well as ugliness to that place leaving bad smell and also recognizing the need for the Internet in daily life, we agreed to offer free Wi-Fi to people.

In recent days, the urban population has risen quite rapidly. The city or states will face many problems due to the growing population of cities or states, such as environmental problems in which garbage waste increases, different types of diseases increase and health problems are created. Garbage waste collection and its management has been a very important concern in recent times. 2 October 2014 In India, Indian Prime Minister Narendra Modi announced the launch of the Government of India's Clean India Project [2]. This project includes 4,041 cities and the country's infrastructure. The smart Wi-Fi dustbin device for intelligent garbage waste collection was inspired by this mission. The research suggested in this paper shows how the Smart bin solution enables real-time cleaning of public areas such as train stations, global

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stores, schools, hotels etc. to identify cleanliness problems. The system is also capable of helping to maximize overall efficiency and cleanliness.

II.   BACKGROUND

This paper aims to research the implementation of the IR sensor, micro controller and Wi-Fi module smart garbage management system [3]. This method only includes dustbin cleaning when the amount of garbage reaches its limit. It is important to consider the public concerns about the increased rate of use of resources and waste production, and so policymakers have promoted recycling and reuse initiatives to minimize raw material demand and reduce the amount of waste going to land [4]. The purpose of this paper was to describe the characterization of waste and the existing structure of management activities. The paper highlights a summary of the existing Thousand Municipalities Municipal Solid Waste Management (MSWM) framework and ends with a few recommendations that could be helpful for the authorities to work to further develop the current management systems.

In, the proposed system explains that, with the aid of sensor systems, the amount of waste in the dustbins is detected and transmitted to the approved control room via the GSM system[5]. To interface the sensor device with the GSM system, a micro controller is used. A Interface is also created for various selected locations to monitor the desired garbage-related information. This will help to better control the disposal of garbage.

In, the application of our Smart Bin model to the management of an entire city's waste collection system is identified [6]. A large amount of data is generated by the sensor network activated by smart bins connected through the cellular network, which is further analyzed and visualized in real time to gain insight into the status of waste around the city. The purpose of this paper is also to promote further study on the issue of waste management.

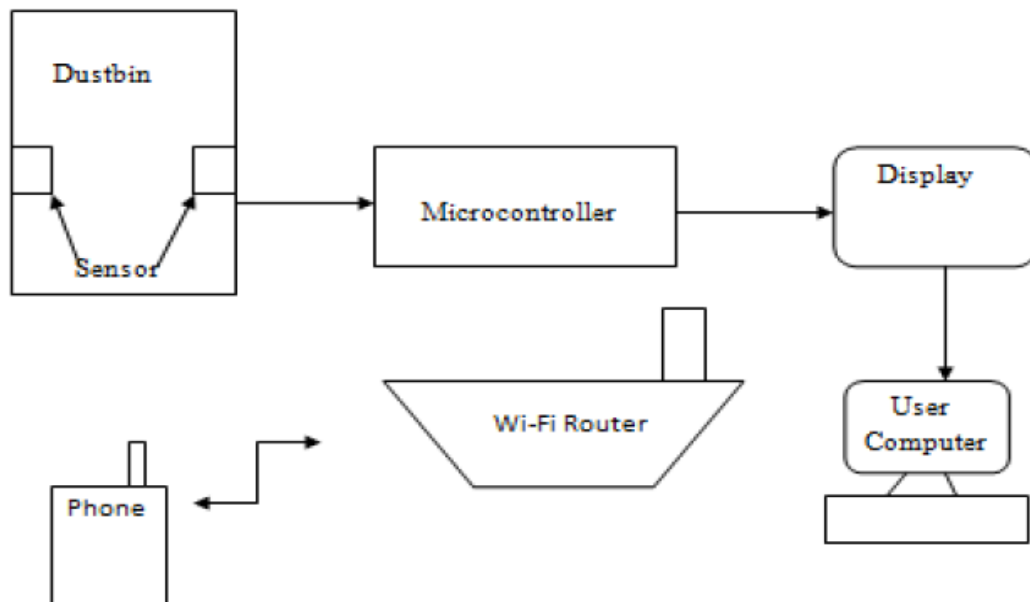_____

III.   PROPOSED SYSTEM

Fig. 1: Proposed System

This architecture demonstrates our system's general definition. The first component of our system is literally thrown into the dustbin by the consumer. The hardware that is the electronic system is already attached to the dustbin, the sensor recognizes it after the user puts the some garbage and shows the user's unique id. The user reads the number and then opens the window with the address of our web application. The web application is the second component of our system; the user puts in the textbox the specific id and submits it. Then the machine checks the id and compares it with the value of the database, whether it matches the system that gives the user the password of the Wi-Fi network computer, or if it does not fit the user's failed post. The password owner can use internet facilities freely after matches. Two key modules in the Smart Wi-Fi dustbin system design:

1. Hardware Module
2. Web Application

- **Hardware Module**

The hardware portion of our device is designed using the IR sensor Microprocessor 8051, LCD. We use the language Embedded C in that difficulty to produce the unique number.

- **Web Application**

We use the java technology in this framework to build the web application and we use the MySQL database to store the data for maintaining the database of admin information and the password data collection.

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Advantages

- Protection: For security purposes, only a user who has a unique ID matching the values of the device database is given.
- Reliability: The user gets the number that is already stored in the system from the system.
- Maintainability: Preserve the previous user's password and block the unauthorized user as well.
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Dis-Advantages

- Need for a good sensor for dust with daily meaning.

Applications

In both the private and public sectors, this system is used.

- In the government sector, this device is used.
- In different public sectors, such as train stations, bus stops, schools, malls, multiplexes, shopkeepers, gardens, this device is used.

IV.   CONCLUSION

Two key modules in the Smart Wi-Fi Dustbin system design:

1. Module for hardware, including Dustbin with sensor and Monitor

2. The Web Application development module.

3. Wi-Fi Router for Internet provisioning as well.

Such basic roles have been set up. We have suggested an IoT Based Smart Garbage system in this scheme. The bin ashes a special code when someone throws garbage into a dustbin, which can be used to gain access to free Wi-Fi. The sensor tests that garbage fills or does not fill in the dustbin and the router provides users with Wi-Fi. Much of our project depends on the functioning of the Wi-Fi module, which is necessary for its implementation. The principal goal of this project is to improve the vision of a smart city.

V.   REFERENCES

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