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EZbin

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***Abstract*-- Now a days 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. We will try to build a system which will notify the corporations to empty the bin on time. In this system, we will put a sensor on top of the garbage bin 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, then the employees can take further actions to empty the bin. This system will help in cleaning the city in a better way. By using this system people do not have to check all the systems manually but they will get a notification when the bin will get filled.**

***Keywords*-- GSM module, Arduino Uno, ultrasonic sensor, bread board, power supply.**

I. INTRODUCTION

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. With the help of this system minimal number of smart bins can be used around the whole city and the city will still be much cleaner. There has been an unprecedented growth in the number of devices being connected to the Internet since past few years. All these devices connected to the internet are part of the IoT infrastructure which can communicate with each other. The IoT network consists of embedded electronics, sensors and software that allows these devices to send and receive data among each other. This is why it is beneficial to use such an existing infrastructure for designing the proposed security system. The disadvantages of the existing system are that the employees have to go and check the bins daily whether they are filled or not, it results in high cost. If the bin doesn't get emptied on time then the environment becomes unhygienic and illness could be spread.

The proposed system will help in removing all these disadvantages. The real-time information can be gained regarding the level of the dustbin filled on the system itself. It will also help in reducing the cost as the employees will have to go only at that time when the bin is full. This will also help in resource optimization and if the bins will be emptied at time then the environment will remain safe and free from all kinds of diseases. The cities will become cleaner and the smells of the garbage will be much less.

II. LITERATURE SURVEY

Proposed Smart Dustbins can prevent the accumulation of the garbage along the roadside to a great extent thereby controlling the widespread of many diseases. It can prevent pollution and also prevent the consumption of the spread out garbage by the street animals. This Smart Dustbin can contribute a lot towards a clean and hygienic environment in building a smart city.

Proposed smart dustbin management system using IoT as a hardware and ionic framework as our software insures the cleaning of dustbins soon when the garbage level reaches its maximum. If the dustbin is not cleaned in specific time, then the record is sent to the higher authority in our case the admin who can take appropriate action against the concerned employee. This system also shows the use of PIR sensor, IR sensor and APR module. When some motion is detected by the PIR sensor it opens the gate of West dustbin using the servo motor and when the PIR detects the motion APR module gives the information fed into it of minimum 30 sec. For our lucrative part that is shoe polish we have used IR sensor and to rotate the brush we have used the DC motor.

III. METHODOLOGY

A. To start with you will first have to enter the height of the dustbin. This will help us to generate the percentage of trash in the trashcan. We then have two criteria which needs to be satisfied to show that the particular bin needs to be emptied

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B. The amount of trash, in other words let's say if your bin is half full you don't really need to empty it. Our thresh, or maximum amount that we permit of trash, is 75% of the bin.(you can alter the thresh according to your preferences)

Fig 1. Propose system

C. If supposing a particular trashcan fills up 20% and then for a week doesn't change, it comes into our second criteria. With time even small amount will start routing and smelling .To avoid that our tolerance level 2 days , so if a trashcan is less than 75% but it is two days old then it will also need to be emptied.

Below is the representation of workflow which might occur at various stages.

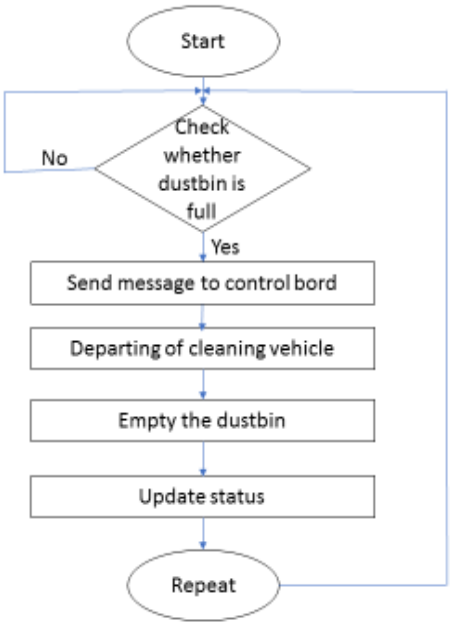

Fig 2. Flow Diagram

IV. IMPLEMENATION

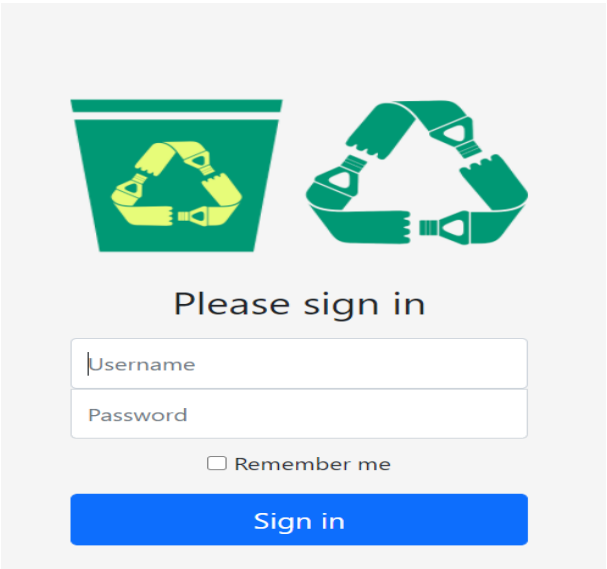

Fig 3. Login page

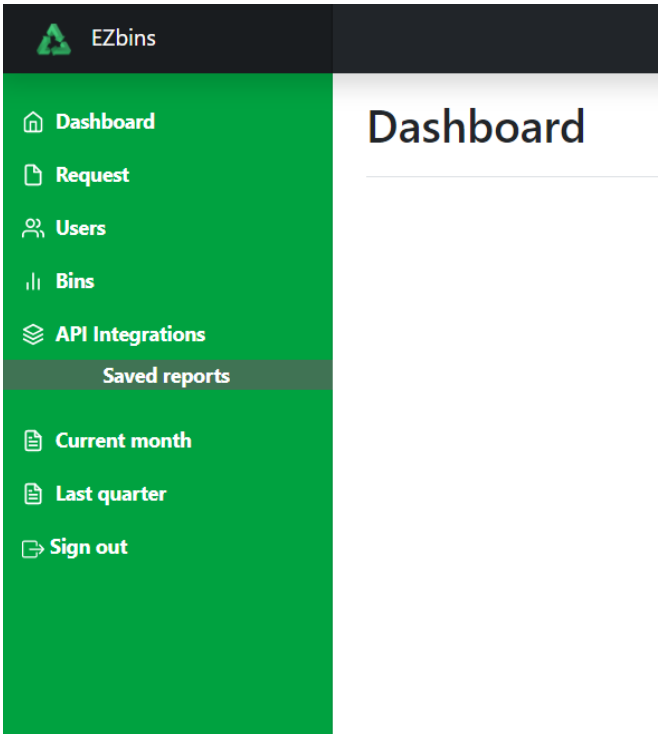

Fig 4. Dashboard screen

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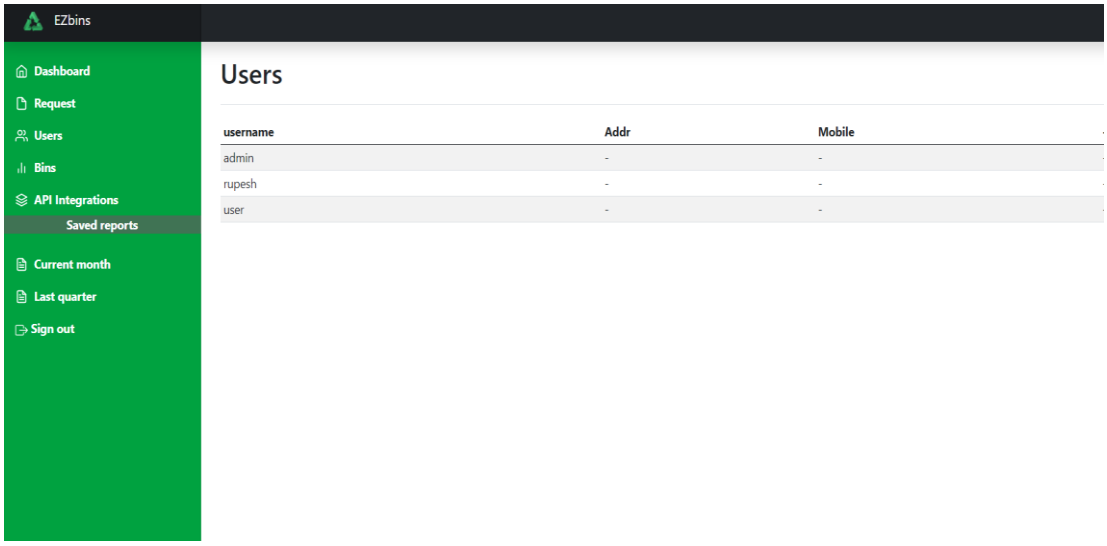

Fig 5. User Requests

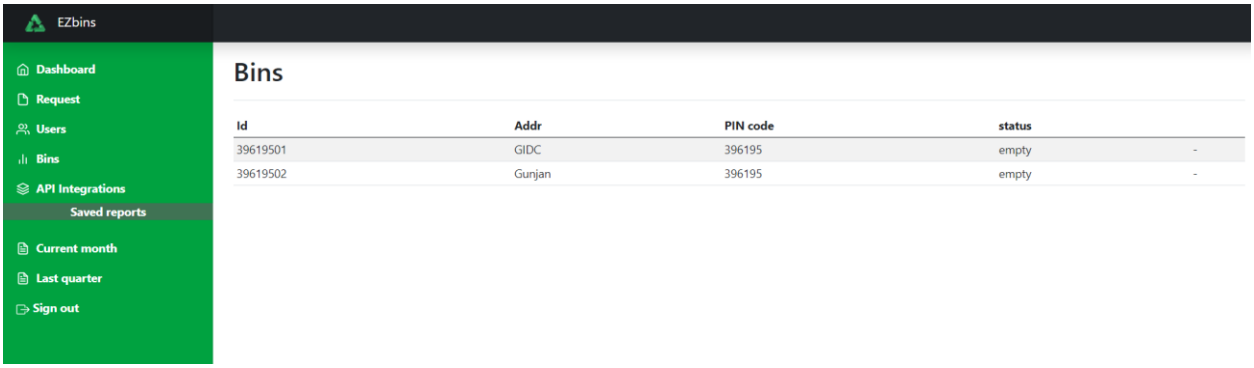

Fig 6. Bins Updates

V. Conclusion And Future Work

Various features such as durability, affordability, prevention against damage and maintenance issues are addressed when these smart dustbins are designed. This Smart Dustbin can contribute a lot towards clean and hygienic environment in building a smart city. But since the technology is new in India, proper awareness should be created among the public before it is implemented on a large scale. Otherwise, sensitive devices like sensors might be damaged due to rough action of the users.

Solar Panel can be used, Virtual Server can be, Water Proof circuit design, Human Machine Interface, Bug Converter for Smooth power supply, linking with Adhar Card.

REFERENCES

[1] https://scholar.google.com/scholar?as_q=A+Survey+of+Internet-of-Things%3A+Future+Vision%2C+Architecture%2C+Challenges+and+Services&as_occt=title&hl=en&as_sdt=0%2C31
Singh, G. Tripathi and A. J. Jara, "A Survey of Internet-of-Things: Future Vision Architecture Challenges and Services", Proc. IEEE World Forumon Internet of Things 2014, *pp. 287-292, 2014.*

[2] https://scholar.google.com/scholar?as_q=Internet+of+things%3A+A+hands-on+approach&as_occt=title&hl=en&as_sdt=0%2C31.
Bahga and M. Vijay, Internet of things: A hands-on approach, New Delhi, India:Universities Press, pp. 20-29, 2015.

[3] https://scholar.google.com/scholar?as_q=IoT+based+garbage+monitoring+system&as_occt=title&hl=en&as_sdt=0%2C31
Naman Sharma, Nikhil Mishra and Paurvi Gupta, "IoT based garbage monitoring system", International Journal of Advance Research Ideas and Innovations in Technology, pp. 1850-1853, 2018.