Smart Gadget Bin For E-Waste Management

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Abstract - *Electronic waste or E-waste consists of discarded or unwanted electrical or electronic parts or equipment. Increase in penetration rate and rapid obsolescence will create crises in developing nations like India. In India most of E-waste is generated in metropolitan cities like Mumbai, Bangalore, Delhi, Kolkata, Pune etc. In Maharashtra Pune, the city known as Oxford of East and home of different industries especially in IT sector, figures prominently in the list of cities that generates huge E-waste in India. Most of the house hold E-waste in Pune is dumping in landfills with other waste or it's incinerated by kabadiwalas, while on other hand formal sector facing problems due to irregular collection of E-waste and accordingly disposal . According to study Pune city generates 26,000 metric tonnes (MT) of E-waste is generated in the city every year. E-waste generation rate is highly increases day by day especially some major items due to change in technology, fashion, per capital income of citizens. There existed halfhearted efforts of Pune Municipal Corporation and some organizations managing only a small percentage of the total E-waste generated. E-waste Management is very essential and critical task as E-waste becomes a threat to human being. Government has passed a law for E-waste management and handling in.*

KeyWords*:*UltraSonicSensor,GSM,Arduino,E-Waste

1. INTRODUCTION

Electronic waste or E-waste consists of discarded or unwanted electrical or electronic parts or equipment. Increase in penetration rate and rapid obsolescence will create crises in developing nations like India. In India most of E-waste is generated in metropolitan cities like Mumbai, Bangalore, Delhi, Kolkata, Pune etc. In Maharashtra Pune, the city known as Oxford of East and home of different industries especially in IT sector, figures prominently in the list of cities that generates huge E-waste in India. Most of the house hold E-waste in Pune is dumping in landfills with other waste or it's incinerated by kabadiwalas, while on other hand formal sector facing problems due to irregular collection of E-waste and accordingly disposal. According to study Pune city generates 26,000 metric tonnes (MT) of E-waste is generated in the city every year. E-waste generation rate is highly increases day by day especially some major items due to change in technology, fashion, per capital income of citizens. There existed halfhearted efforts of Pune Municipal Corporation and some organizations managing only a small percentage of the total E-waste generated. E-waste Management is very essential and critical task as E-waste becomes a threat to human being. Government has passed a law for E-waste management and handling in.

2. SCOPE

This paper combats the problem of overflowing solid waste bins which pollute the surroundings. The level of E-waste present in any bin is determined by the ultrasonic distance measuring sensor. When the e-waste level in any gadget bin exceeds a pre-defined level, then the microcontroller send an alert message to the e-monitoring station, and, the workstation then assigns the nearest collector to collect the e-waste from such bins, which have sent an alert message. It informs when the container is at full capacity and when it needs to be emptied, thus allowing the sanitation specialists to work more efficiently and cut unnecessary costs.

With the web application, the administrator will be able to search for dustbins. The result will be based on the criteria the user inputs. There are several search criteria and it will be possible for the administrator of the system to manage the options for those criteria.

The result of the search will be viewed either in a list view or in a map view, depending on what criteria included in the search. The list view will have one list item for each gadgetbin matching the search criteria and show a small part of the gadgetbin information so the user can identify the gadgetbin. The administrator will be able to either select a gadgetbin as target destination or get information how to get there, or view the information of a specific gadgetbin.

The web portal will provide functionality to manage the system and the gadgetbin information. It will also provide information about the system.

3. LITERATURE SURVEY

The waste collectors or kabadiwalas or rag pickers are the most important link in electronic waste flow and they are collecting most of electronic waste in Pune city from household users as well as from manufacturers. There is another set of operators, waste traders with better financial capacity, who bid for larger volumes of waste being discarded by companies and organization through auctions. The waste then flows down to scrap dealers; first they are dismantling Ewaste into different components, collect useful components and then shift the other waste to plastic recyclers or thrown on open land.

By use of proper tools, machinery, equipment without damaging health of labour which is finally resulting in efficient management of E-waste. Life cycle of the electronic and electrical equipment starting from the birth at manufacturing sector reaches the consumers and after their consumption at user end, these equipment enter the chain of recycling at the collection centers designated by companies and thus reaching authorized recyclers and dismantler's.

4. EXISTING SYSTEM

In Existing system, People Manually used to dump the E-waste on the streets. No proper care was taken for the disposal of the electronic items.

Disadvantages of Existing System

1. Health Hazards.
2. Uncleaned Environment.
3. More Manual power.
4. More Fuel Consumption.

5. PROPOSED SYSTEM

In this system, we have implementeda Smart Gadget Bin for E-waste Management. This system use ultrasonic sensor fixed smart gadget bin with ardino board and gsm module. Whenever the Bin will exceed the criteria range of 70%, a notification will be sent to the registered person who will collect the E-waste .

Advantages of Proposed System:

- Reduced Fuel Consumption.
- Easy tohandle
- Clean and Safe Environment.

6. ARCHITECTURAL DESIGN

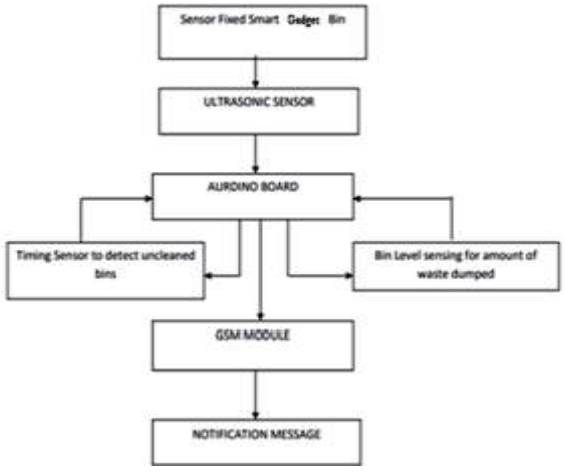

Fig – 3: System Architecture

Above Fig shows the system architecture for smart waste management system. It shows that garbage bin which when get filled gradually it will send alert SMS to the E-Waste collector. Fig. shows flow of the system that how it executes. If the bin is filled upto 70% it sends alert message to collector else it will wait until upto reaches upto70%.

7. CONCLUSION

In the existing system people used to dump the e-waste anywhere so it used to harm the enviornment and make the enviornment uncleaned and untidy and there was no proper disposal. To overcome this problem, we have implemented a Smart Gadget Bin for E-waste Management. When the bin reaches upto to the specified critera a notification alert is sent to the Authorized/Registered person or the collector then he collets the e-waste from the certain Gadgetbin.

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