

CLEAN EXPERTS

JUST CLEAN IT

SMART GARBAGE TRUCK TRACKING AND ALERT SYSTEM USING IOT

Lead: **Aditya S Gourishetty**

Software: **S.Prem Raj**

Sales: **N . Sushanth Reddy,**

Research Member: **Guntuku . Geethanjali,**

Embedded Systems Engineer: **Subash S**

INTRODUCTION

- ▶ Having a hygienic and healthy surrounding is one of the minimum requirements for quality living.
- ▶ With urbanization and increasing population in cities proper waste management has become crucial and severe challenge.
- ▶ Providing a IOT based solution for garbage collection.
- ▶ Based on level of garbage , temperature and humidity factors.
- ▶ Updating information time to time using micro controllers and sensors.
- ▶ Helps to eradicate the garbage disposal problem.

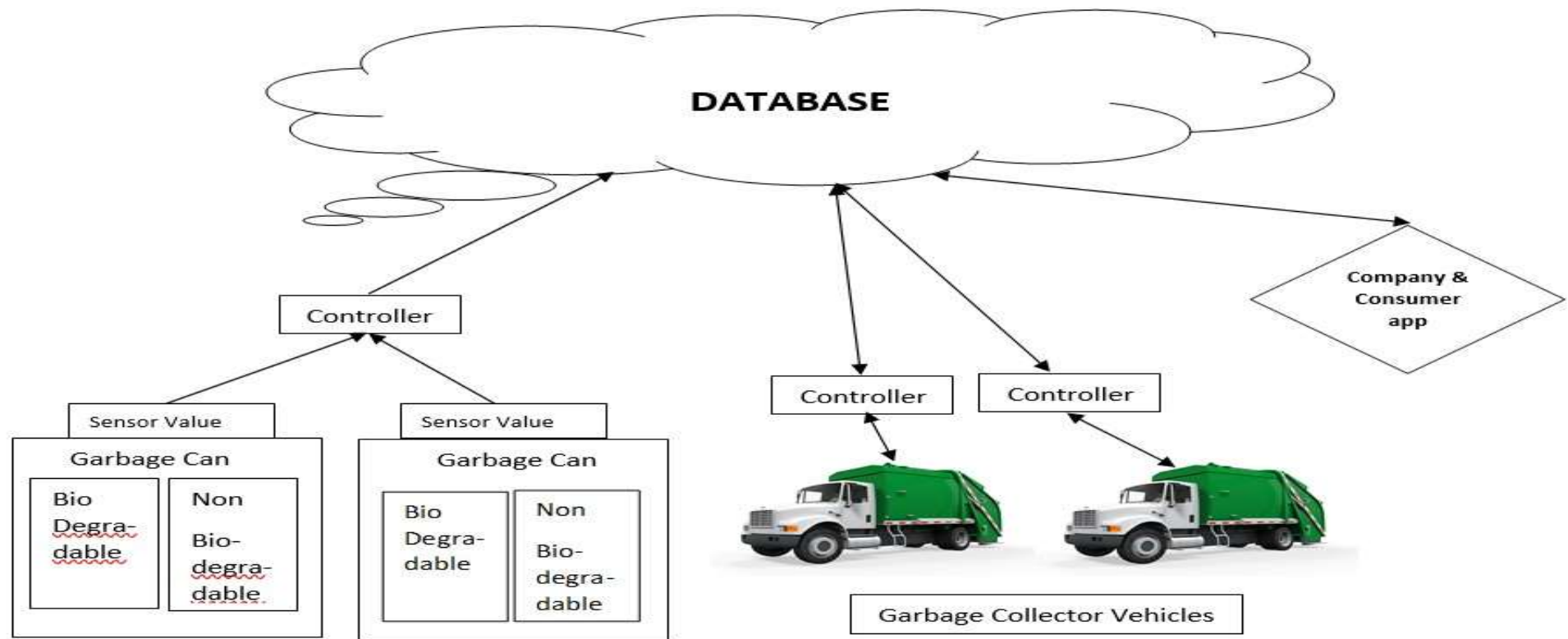
EXISTING SYSTEM


- ▶ Waste collection, storage and transport are essential elements of any SWM system and can be major challenges in cities. Waste collection is the responsibility of the municipal corporation, and bins are normally provided for biodegradable and inert waste . Mixed biodegradable and inert waste is often dumped, with open burning a common practice.
- ▶ The current status of SWM in India is poor because the best and most appropriate methods from waste collection to disposal are not being used . This is making environment untidy.
- ▶ Proper waste management is a main drawback in Society.

PROPOSED SYSTEM

- ▶ In order to overcome the drawbacks of the existing system . We have proposed a system which provides a proper solution to the waste management.
- ▶ In our system we use different sensors to differentiate the waste . At the outset we measure the level of garbage using Ultrasonic sensor, then we use DTH sensor to check the humidity and temperature of the garbage .these sensors are connected to web server and provides time to time update about the level and the condition of garbage.it informs the system and it notify the nearest garbage collector vehicle.
- ▶ The proposed system is an attempt to improve current waste collection system in India for the “Clean India Mission”.

SYSTEM ARCHITECTURE

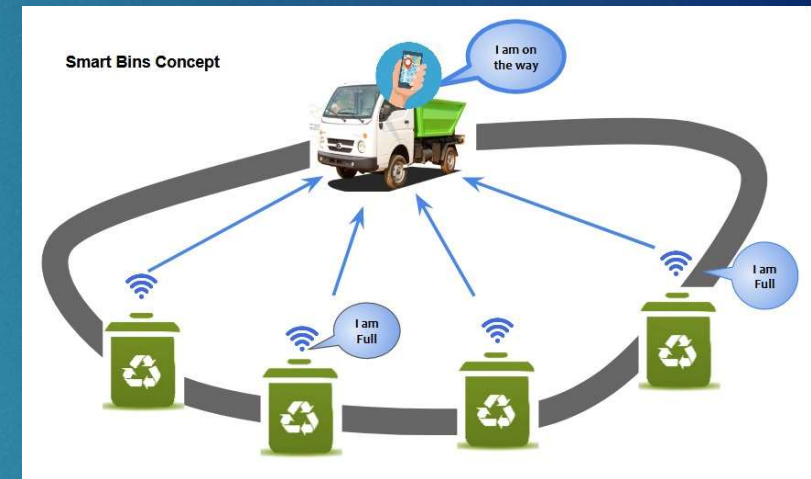


- 
- ▶ The sensors in the garbage cans indicates the quantity and quality of the garbage material, based on which the data is sent to the database then to the Company app. The company app then alerts the nearby Garbage Collector Vehicles indicating them to collect the garbage. There will also be a consumer app which is accessible to the consumers if they are in an emergency and want their garbage to be cleaned, they can contact us through the app. The Garbage Collector Vehicles will keep on updating their locations for tracking, all these data will be stored and monitored in the database.
 - ▶ Temperatures between 32°C (90°F) and 60°C (140°F) normally indicate rapid decomposition is taking place in the compost heap and this is most common shortly after material has been added.
 - ▶ The rate of decaying of the bio degradable waste depends on the moisture content in the surroundings.

IMPLEMENTATION

How do we collect the garbage optimally for the dustbins before decaying the waste present in it?

- ▶ Collection process carried out after fixed intervals.
- ▶ The dustbins are collected according to the decreasing current fill-up status, temperature, and humidity inside the bin.
- ▶ We first find out the average fill-up status of all dustbins. Then if the average is greater than some threshold like 75% then schedule the collection process.
- ▶ In case the temperature level reaches the threshold value then the collecting is processed.
- ▶ This helps to remove the decayed waste fast, so that it may not lead to any health issues for humans.





ADVANTAGES

- ▶ Garbage trucks are efficiently used, and fuel and time can be saved.
- ▶ We grade the garbage quality and in all the localities and set preference for the garbage pickup.
- ▶ On a long term, data can be used to determine the need of trucks and distribution of the garbage trucks in different areas.
- ▶ Garbage trucks are tracked and monitored always and their efficiency is graded.
- ▶ Can reduce health hazard in locations where garbage bins are placed.

DISADVANTAGES

- ▶ Garbage should be manually separated.
- ▶ Workers should be trained to do the tasks.
- ▶ 3 The initial investment is increased.
- ▶ More maintenance cost and regular check is needed.
- ▶ Driver has to manually check the location and get direction from Google maps.

APPLICATION



- ▶ Empowered Swach Bharat Mission.
- ▶ e-Governance Based on Digital India.
- ▶ Reduce environmental pollution.
- ▶ Real time based cleaning of our cities.
- ▶ It makes our system transparent between Municipal Corporation, Workers and public.

CONCLUSIONS



- ▶ This system help the local municipal administration in waste management system. i.e., monitoring of domestic wastage clearance at proper time to avoid damage to the public health.
- ▶ A web server is also been set up through which the municipal authorities also get information about the bins in their area.
- ▶ This system provides effective waste management and maintain a clean environment.

REFERENCES

- ▶ SMART CITY WASTE MANAGEMENT SYSTEM USING GSM - Shraddha Zavare, Rashmi Parashare, Shivani Patil, Pooja Rathod
- ▶ AUTOMATIC GARBAGE FILL ALERTING SYSTEM – G . Kathiravan, V. Ravichandran, D . Sampath Kumar, M . Swaminathan.
- ▶ IOT BASED SMART GARBAGE ALERT SYSTEM USING ARDUINO UNO - Deepali B Baisane¹, Prof . Priti Rajput