



IoT Based Garbage Management System

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ABSTRACT

In our city many times the garbage at public places are overflowing. It creates unpleasant look for that place and spread smell which is harmful for people. To avoid all this situations we are going to implement a project called Garbage Management System using IOT technology (Internet of Things). As the van coming to collect the Garbage the Message will sent to all users of that particular Area. We are going to place a sensor (Ultrasonic sensor) under the dustbin van to detect the level of garbage. When the sensor signal reaches to 75% value a notification (like message) will be sent to respective Municipal authority person. So that person can send the second collection van to collect the garbage.

Keywords: *IOT, Ultrasonic Sensor, System on Chip (SOC)*

INTRODUCTION

This Paper Introduce you to the use to the use of IOT technology in garbage detection and collection in smart way. It is Truth that overflow of garbage is harmful for people still we see wastage of Electricity, water, etc. in our daily life. The environment is surrounded with natural things but if any distress or unfortunate event occurs it distracts the natural environment.

In many cities with a population over a million and solid waste generated is Tons per day and municipal collection vehicle having many trips a day but still there is overflow of garbage in many area. So for all such area this garbage management and collecting system developed.

The basic idea of the project is to design a smart garbage detection system which will automatically notify the current status of vehicle location so that, All user can alert and also to detect the level of garbage so that the municipal authority can send second vehicle for continuation and hence there is no overflow of garbage so that this is the major part of developing a city into a smart city.

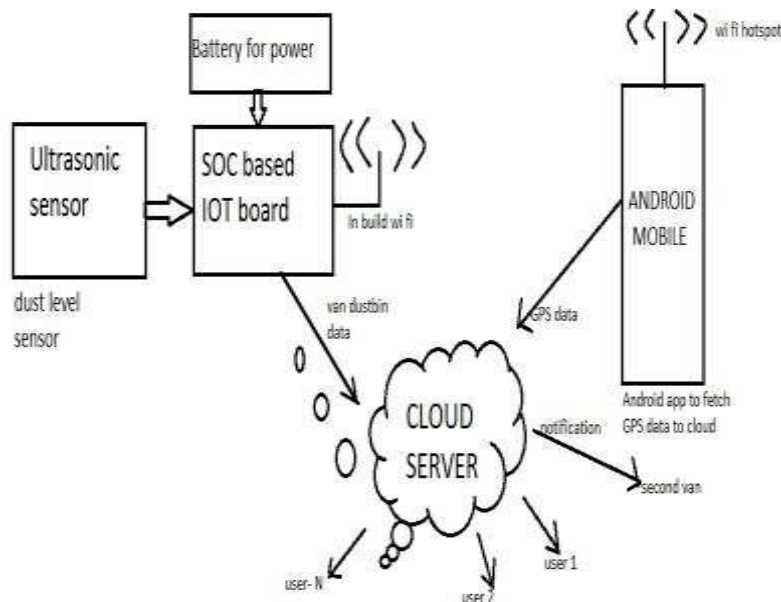


FIGURE (1): BLOCK DIAGRAM

INTERNET OF THINGS

The term Internet of things was developed by Kevin Ashton, who was the director of auto ID centre of MIT in 1999. Internet of things is a new technology which can be communicated via the internet to connecting the unconnected things. It allows the things to access from Internet IOT have ability of connections between things and people deliver the right information to person at right time. In the field of IOT things communicate with each other and exchange information to provide advance services for users. So by knowing recent advance devices with various sensors and communication module together with communication network such as wifi

SYSTEM ON CHIP

1. System on chip is
2. Department of Electronics & Telecommunication integrated circuit that integrates all components on a single chip.
3. This chip use to reduce the complexity of the circuit as all components are fabricated on a single chip.
4. It is a collection of all components and subcomponents of a system on to a single chip.
5. SoC design allows high performance, good process technology, miniaturization,
6. Efficient battery life time and cost sensitivities.
7. This revolution in design had been used by many designers of complex chips, as the performance,

power consumption, cost, and size advantages of using the highest level of integration made available have proven to be extremely important for many designs.

8. In a SoC design which uses multi-million gates the design and test engineers face various problems such as signal integrity problems, heavy power consumption concerns and increase in testability challenges. .

ULTRASONIC SENSOR

An Ultrasonic sensor is a device that can measure the distance to an object by using sound waves. It measures distance by sending out a sound wave at a specific frequency and listening for that sound wave to bounce back. This is the HC-SR04 is the Ultrasonic ranging sensor. This economical sensor provides 2cm to 400cm of non-contact measurement functionality with a ranging accuracy that can reach up to 3mm. Each HC-SR04 module includes an Ultrasonic transmitter, a receiver and a control circuit.



FIGURE (2) ULTRASONIC SENSOR

CONCLUSION

This paper shows a general overview of IOT Base garbage management system project that are masterminded by their expected services. It also covers the survey of various technologies which emphatically support the home automation systems in reliable way. This system also helps to monitor the fake reports and hence can reduce the corruption in the overall management system. This reduces the total number of trips of garbage collection vehicle and hence reduces the overall expenditure associated with the garbage collection. It ultimate helps to keep cleanness in the society. Therefore, the smart garbage management system makes the garbage collection more use of solar panels in such systems may reduce the energy consumption.. A waste collecting and monitoring team which is deployed for collection of garbage from the city can be guided in a well manner for collection.

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