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Smart Waste Management System for Metropolitan Cities – Literature Survey

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1.Waste Management Improvement in Cities using IoT

Authors: Shivam Jagtap ,Aditya,RavirajBochare,Ajitkumar Shitole ,Ashwinkumar Patil

Published Month & Year : February 2020

Garbage collection is one of the most critical problems faced by Municipal Corporation. While implementing the waste management in cities the biggest challenge is the management of waste in cost optimal way with high performance. The current process of collecting the waste,separating it and transporting the containers everyday which is a complicated process. This paper deals with the concept of waste management and the smart system for wastemanagement with higher benefits to the society. The proposed system for waste management will use various sensors for sensing the type of waste and separate the waste in different categories and actuator to inform the management to collect the waste container.This system will save money and time compared to the already available process of waste management and also improves the society cleanliness.Management and disposal of waste is a challenge in today's world. The dumping of garbage wastes at open landfill sites is the common method of disposal. The disposal method of dumping in open land sites has an adverse effect on the environment. Due to dumping of waste in such an open environment it affects the health of human beings and also life of plants & animals

2.Smart Prediction and Monitoring of Waste Disposal System Using IoT and Cloud for IoT Based Smart Cities

Authors: Jacob John

Published Month & Year : August 2021

One of the prominent applications of Internet of Things (IoT) in this digital era is the development of smart cities. In IoT based smart cities, the smart objects (devices) are connected with each other via internet as a backbone. The sensed data by the smart objects are transmitted to the sink for further processing using multi hop communication. The smart cities use the analyzed data to improve their infrastructure, public utilities and they enhance their services by using the IoT technology for the betterment of livelihood of the common people. For IoT based smart cities, waste collection is a prominent issue for municipalities that aim to achieve a clean environment. With a boom in population in urban areas, an increasing amount of waste is generatedPublic bins begin to overfow for a long period before the process of cleaning starts, which is resulting in an accumulation of bacteria causing bad odors and spreading of diseases. In order to overcome this issue, in this paper an IoT based smart predication and monitoring of waste disposal system is proposed which utilizes of-the-shelf components that can be mounted to a bin of any size and measure fll levels. An Arduino microcontroller is employed in the proposed model to interface the infrared (IR), ultraviolet (UV), weight sensors, and a Global Positioning System (GPS) module is used to monitor the status of bins at predetermined intervals.

3.Garbage Collection System using IoT for Smart City

Authors:Mohit Badve,Apoorva Chaudhari,Palak Davda ,Vinal Bagaria,Dhananjay Kalbande

Published Month & Year : May 2021

In today's world, one of the major environmental problems is the collection, management and disposal of the garbage. The current process of garbage collection does not consider real-time garbage level in dustbins while generating routes for garbage trucks. Collecting garbage in an unordered way leads to overfilling of bins, rotting garbage smell, more fuel consumption of trucks and hence has adverse effects on the environment. Moreover, the capacity of garbage trucks is not utilized. With the development of smart cities around the globe, there is an increasing need for IoT based technological solutions for solid waste management which will help in promoting a clean and sustainable environment. The proposed system gathers the real-time garbage level of every bin with the help of ultrasonic sensors. This data is then used to generate dynamic routes for garbage trucks while considering several factorslike capacity of trucks and bins, the distance between bins, and the level of garbage.

4.Enhanced Smart Waste Management System With Incinerator Compartment

Authors :P.Leninpugalhanthi,G.Bharanidaran,T.Bahiradhan, E.Abirami,R.Anandh, R.Senthil Kumar

Published Month & Year : July 2021

As of now we are in the 21s century, where wefind many technologies ruling the world, and the Internet of Things is one among them which can be defined as an intelligent node that was interconnected in a global infrastructure which helps to implement the connectivity of anything from anywhere at anytime and transferring of data over wireless network. Human growth becomes liable to overwhelming and stopping difficulties which have been putting its existence in danger.As the human population increases, and the lack of knowledge about the waste management system, increase the risk of pollution to the environment. The enormous measure of waste products is additionally a major danger to the environment.Disposing the Waste like wet, dry or biodegradable and non biodegradable which are getting dumped together are being the big deal in India right now. There was a large amount of plastics and other wastes were produced every year which are not currently carried out in any recycling plants. In order to provide a solution for these wastes and managing the wastes, we proposed a "Enhanced Smartwaste management system with Incinerator compartment", Where the wastes which may be located in either city.