Literature Survey for IOT Based Smart Waste Management System For Metropolitan Cities

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Paper Title: Smart Garbage Monitoring System using Internet of Things (IOT)

Author(s): Prakash Kanade & Prajna Alva

Abstract:

Defilement of the environment by trash is major. A Wi-Fi module, an ultrasonic sensor, an Arduino microcontroller, and a large battery are the employed parts. The Arduino microcontroller gathers data from the load cell and ultrasonic sensor. The depth of the garbage in the compartment is determined using an ultrasonic sensor, and the weight of the waste container from the heap cell is approximated. Utilized to display the information is an LCD panel. The Wifi module transmits to the internet. The executive can plan and monitor the disposal of garbage using this framework. When the capacity hits saturation, the scavengers will receive an alarm. It is possible to examine and track information about garbage cans, which also saves money.

Paper Title: Approach to the garbage collection in the Smart clean city Project.

Author(s): Borozdukhin, O. Dolinina & V. Pechnkin.

Published on: Yuri Gagarin State Technical University of Saratov, Russia, 2016.

Abstract:

Later, Andrei Brozdukhin and associates suggested the new system with two functional hands: software components and distinctive indication equipment [4]. The distinctive indication device is fastened to the trashcan sides. It consists of two components: a sensor and a receiver-transmitter. The sensor measures the amount of trash in the trashcan and is connected to a transmitter that alerts the appropriate authorities when the dustbin is full and needs to be emptied. Artificial intelligence systems are now tasked with determining the quickest route and closest truck driver to the relevant trashcan and alerting them for the garbage pickup.

Paper Title: Smart Garbage Monitoring System Using IOT

Author(s): Dr. Ihtiram RazKhan, Mehtab Alam, Anuj Razdan

Abstract:

The Smart Garbage Monitoring System's primary goals are to improve the city's smart vision while utilizing less resources and labor-intensive processes. The atmosphere is made clean and sanitary by employing a sensor and GSM, which also guarantees environmental cleanliness. The improper storage and disposal of domestic garbage leads to pollution and public health issues. An IoT-based smart waste monitoring system was created employing an ultrasonic sensor as a distance measuring sensor, GPS to convey the location of the trash can, and GSM to send a message to the local government with the current location. Utilizing Google API as a software tool and the Arduino IDE as an IDE tool, the Smart Garbage Monitoring System with IOT was created.

Paper Title: Smart waste management system

Author(s): F. Folianto, Y. Low, and W. Yeow

Published on: In Proceedings of the IEEE 10th International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), Singapore, April 2015.

Abstract:

One of the objectives of smart cities is waste collection. Planning trash truck routes while taking into account social, economic, and environmental considerations is a daily chore in metropolitan settings. The smart bin system, which determines if trash cans are full, is used in this article. Through a wireless mesh network, the system is intended to collect data and transmit it to users. The system also makes use of the duty cycle approach to minimize power usage and increase operating duration. In an outdoor setting, the smart bin system was tested. Data was gathered through the testbed and sense-making techniques were used to gain data on trash bin usage and daily seasonality.

Paper Title: IoT-based solid waste management solutions

Author(s): K. Pardini, J. Rodrigues, S. A. Kozlov, N. Kumar, and V. Furtado

Published on: Journal of Sensor and Actuator Networks, vol. 8, no.1.p. 5, 2019.

Abstract:

Through cyber physical systems, the Internet of Things (IoT) and cloud computing provide an automation option that will transform the way solid waste management is carried out. In this study, a detailed overview of of waste management models found in the literature is carried out while taking IoT needs into account. The related literature based on IoT infrastructure for effective waste management in urban scenarios is then thoroughly reviewed, with a focus on the interaction between concessionaires and waste generators (citizens) from the perspective of a quicker collection time with lower costs, as well as citizenship promotion. With the aim of highlighting the most pertinent strategies and identifying open research, an IoT-based reference model is outlined, and a comparison study of the solutions that are already offered is given.

Paper Title: Optimal path planning for selective waste collection in smart cities.

Author(s):M.V. Bueno-Delgado, J. L. Romero Gázquez,

P. Jiménez, and P. Pavón-Mariño.

Abstract:

In this work, a practical software platform for smart and sustainable cities has been created in conjunction with an optimal path planning algorithm that enables computing the best waste collection routes while minimizing socioeconomic (CO_2 emissions, acoustic damage), environmental (CO_2 emissions), and both (number of trucks to be used and fuel consumption). The technique is put to use in Net2Plan, a free planning programme that is often used for modelling and designing communication networks. With the aid of the so-called Net2Plan-GIS library, which may also incorporate the locations of smart bins, Net2Plan makes it easier to introduce the city layout input data to the algorithm. This data is automatically imported from GIS databases.

Paper Title: Smart waste collection system with low consumption LoRaWAN nodes and route optimization**.**

Author(s):L. Álvaro, J. Caridad, J. De Paz, G.V. González, and J. Bajo

Abstract:

In this work, a platform for trash monitoring and management in rural areas is introduced. To measure the weight, filling capacity, and temperature of a garbage container, a prototype of a low consumption wireless node is created. This monitoring enables the collection and analysis of the progressive filling data for each town container as well as the creation of warnings in the event of an incident. A module on the platform is for streamlining rubbish collection routes. For energy, time, and cost savings, this module creates routes on the fly using information collected from deployed nodes. This essay describes a case study that was carried out in Salamanca to assess the effectiveness and viability of the system's deployment.