PROJECT TITLE

SMART WASTE MANAGEMENT SYSTEM FOR METROPOLITAN CITIES

LITERATURE SERVEY

Domain of the Project : IOT
Team ID : PNT2022TMID17949
Academic Year : 2022-2023
Year/Semester : IV/VII

DONE BY

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LITERATURE SURVEY

ABSTRACT :

The Internet of Things (IoT) plays a vital role for improving smart city applications by tracking and managing city processes in real-time. One of the most significant issues associated with smart city applications is solid waste management, which has a negative impact on our society's health and the environment. This work proposes an IoT-enabled solid waste management system for smart cities to overcome the limitations of the traditional waste management systems.

LITREATURE SURVEY REPORTS :

1. Smart Waste Management System for Crowded area Makkah and Holy Sites as a Model

Authors: Dr. Rasha Elhassan, Dr. Mahmoud Ali Ahmed, Mrs. Randa Abdalhalem

This paper focuses on how to handle waste in holy sites and makah as a model .During waste management there are three key challenges we face here , small area, short period of time and the increasing of the Pilgrimages' member .The system proposed by them will use sensors inside the container to separate the waste into 4 categories (food, plastics, papers, and metal) and use actuator at a top level to inform the management system to collect the container. The main technologies used and proposed by them was Internet of Thing, Sensor, Big Data. The different sensors used for categorize the waste are Capacitive proximity sensors separate papers and plastic inside the trash can, the metal sensor is used to detect metal, the infrared sensor detects glass. Then after categorizing the waste through GSM/GPRS the Arduino IDE system sends SMS to the waste vehicle through Radio Frequency receiver when the trash can is full.

Reference link : https://ieeexplore.ieee.org/document/8389897

2. Survey on waste management monitoring System based on IOT

Authors: Kuhu Vaish, Shivani Kashyap, Shivani Nagar, Swati Goel Department of Computer Science and Engineering, Krishna Engineering College, Ghaziabad, India

Solid waste management is the collecting, treating and disposing of solid material that is discarded. As there are some improper disposal of municipal solid waste which can create unsanitary conditions. For evacuating purpose the bins been installed a continuous mountain of the waste levels. The location of the dustbins with the help of the GPRS VKE module which helps the Municipality to locate the Dustbins. With the help of GSM SIM module, the percentage of the dust bins filled will be sent to the truck driver to take the waste from the bins. Thus this project allows an organization to keep track of waste generated, an individual's contribution and an analysis report is generated.

Reference link: https://www.ijirts.org/volume8issue3/IJIRTS204202.pdf

3. IoT-Based Solid Waste Management Solutions:

Authors: Pardini, K.; Rodrigues, J.J.P.C.; Kozlov, S.A.; Kumar, N.; Furtado, V. IoT-Based Solid Waste Management Solutions: A Survey. J. Sens. Actuator Netw. 2019,

With the increase of population density and the rural exodus to cities, urbanization is assuming extreme proportions and presents a tremendous urban problem related to waste generation. The increase of waste generation has been considered a significant challenge to large urban centers worldwide and represents a critical issue for countries with accelerated population growth in cities. The Internet of Things (IoT) and cloud computing offer an automation possibility through cyber physical systems that will change the way solid waste management is performed. Considering IoT requirements, a review analysis of waste management models available in the literature is performed in detail in this paper. Then, a deep review is undertaken of the related literature based on IoT infrastructure for efficient handling of waste generated in urban scenarios,

focusing on the interaction among concessionaires and waste generators (citizens) from the perspective of a shorter collection time with reduced costs, as well as citizenship promotion. An IoT-based reference model is described, and a comparison analysis of the available solutions is presented, with the goal to highlight the most relevant approaches and identify open research issues on the topic.

Reference link: https://www.mdpi.com/2224-2708/8/1/5/htm

4. Garbage Collection and Monitoring System for Smart cities using IOT:

Authors: Neha shinde, Sayli Bhambre, Shraddha Thakur, Varsha Devkule Dept of Computer Engineering, Terna Engineering College, Nerul, Navi Mumbai

A big challenge in the urban cities is that of waste management as there is a rapid growth in the rate of urbanization and thus there is a need of sustainable urban development plans. As the concept of smart cities is very much trending these days and the smart cities cannot be complete without smart waste management system. There needs to be system that gives prior information of the filling of the bin that alerts the municipality so that they can clean the bin on time and safeguard the environment. To avoid all such situations we intend to propose a solution for this problem "Smart Garbage Bin", which will alarm and inform the authorized person when the garbage bin is about to fill. Then message will be send to the authorized person to collect the garbage from the particular area. The authorized person will sends the message from his web application to the garbage collectors by sending a SMS .This system maintain a dry waste and a wet waste separately. This will help to reduce the overflow of the garbage bin and thus keeping the environment clean.

Reference link: https://www.irjet.net/archives/V5/i2/IRJET-V5I2118.pdf

5. A Survey on Smart Waste Management Systems :

Authors: Reeny Zackarias1 , Dr. S. Brilly Sangeetha2 , 1M Tech Student, 2Associate Professor & Head, Department of Computer science and Engineering, IES College of Engineering, Thrissur, kerala, India

The municipal solid waste generation levels are increasing significantly with the ever increasing population, urbanization, migration issues and change in lifestyle. Waste management becomes a challenge faced not only by the developing nations, but also the developed and advanced countries. The efficient management of waste has a significant impact on the quality of life of citizens. The reason is that waste disposal has a clear connection with negative impacts in the environment and thus on citizens' health. Also the quantity of waste near to streets caused to bad smell and bad hygienic condition. It also provides negative impact on tourism. The smart waste management system helps to remove the waste in appropriate time without overflowing and also provides better waste management

Reference link: https://intelligentjo.com/images/Papers.pdf

6. Smart Garbage Management in Cities using IoT :

Authors: Ruhin Mary Saji, Drishya Gopakumar, Harish Kumar S, K N Mohammed Sayed , Lakshmi s.

As the population is increasing day by day, the environment should be clean and hygienic. In most of the cities the overflowed garbage bins are creating an unhygienic environment. This will further lead to the arise of different types of unnamed diseases. This will degrade the standard of living. To overcome these situations an efficient smart garbage management method has to be developed. As the scope of IoT is developing day by day effective methods can be found out easily. Various designs were proposed and have advantages as well as disadvantages. This paper is a survey based on Smart Garbage Management in Cities using IoT. This survey involves various smart garbage management ideas that can be easily implemented.

Reference link: https://www.academia.edu/35496652

REFERENCE :

https://www.academia.edu/35496652/A_Survey_on_Smart_Garbage_Management_in_Cities_using_IoT

https://www.irjet.net/archives/V5/i2/IRJET-V5I2118.pdf

https://www.academia.edu/38004720/Smart_Garbage_Monitoring_System_Using_IoT_A_Survey

https://ijcrt.org/papers/IJCRT2108029.pdf

https://iopscience.iop.org/article/10.1088/1742-6596/1964/6/062110/pdf