Literature Survey

SMART WASTE MANAGEMENT SYSTEM FOR METROPOLITAN CITIES

INTRODUCTION:

The Internet plays an important role in today's world by linking computers to the planet Wide net (www), that permits users to access data from everywhere the world. The Internet of Things (IoT)refers to things that are connected to the internet and can often be managed from there. Garbage is described as solid substances generated as a result of human activities that are removed from the system because they are no longer useful in the respective economic, biomedical, or technical method. In a wider context, solid waste refers to all products that are used in the home, industry, or agriculture. Municipal solid waste (MSM) is described as waste that accrues in areas maintained by municipalities that are responsible for its disposal and recycling. People can throw garbage in waste bins, which is why they are valuable in life. If it didn't happen, the future would be a mess. Because a business or household has a garbage disposal device, it becomes a valuable piece of equipment. The dustbin's position as a conciliator of changing waste practices has barely been regarded, despite its importance in our daily lives. Bins, it is believed, are providing a telling indicator of new garbage relationships in society as they are repurposed as environmental technologies for modern recycling schemes. Garbage, garbage, and litter are all over the television these days, with disturbing statistics of debris filling the world. Despite the grim news, a number of people and policymakers are trying to change the trend by creative waste management practises. The Government has encouraged city-based schemes and public-private collaboration projects to improve waste management systems, but these have proven to be troublesome. The shortage of financial capital, sufficient expertise, and technical competencies in the public sector are the main obstacles to developing solid waste management systems around the world. Governments have begun to look at PPPs as a possible solution. The amount of change and development made was minimal. Medical waste management is tough and complicated, especially during pandemics like COVID. Due to the apparent forte of the global outbreak, adapting contemporary waste centres to reveal the abnormal scientific waste and its affect on viral propagation want particular statistics on the amount of scientific waste generated, waste warm spot and remedy centres. Multiple technological know-how (Sarkodie & Owusu, 2020) on inspection, segregation, transportation, storage, and reliable waste control structures are required to optimize contemporary sources and centres to satisfy the crisis, as healthcare waste portions are anticipated to upward push rapidly. In patient, health care workers, and waste collectors, improper medical waste disposal can lead to accidents, diseases, harmful consequences, and air pollution. Bio-dangerous cloth and its opposite numbers encompass non-dangerous waste, infectious waste, radioactive waste, bacterial waste, chemical waste, cytotoxic waste, sharps waste, and pharmaceutical trash.

ABSTRACT:

Medical waste disposal has been a big issue due to an exponentially growing population and the COVID-19 pandemic. Increased waste generation per person has resulted from urbanization, industrialization, and economic development. Substandard medical waste

separation at the site of origin might have a cascading effect on the environment, putting humans, wildlife, and soil and water bodies at danger. If hazardous airborne pollutants are not effectively controlled, separated, and burned by on-site or off-site incineration, environmental concerns linked with inadequate clinical waste may pollute the air we breathe. This paper proposes an IoT based smart health care waste segregator which segregates the waste into five kinds. The sensors detect and the type of waste and the waste gets disposed into the smart bins accordingly. Using artificial intelligence, the status of filling of the bin is indicated through LED's. When the bin reaches the maximum-level an alert message is sent to the municipal authorities. The filled waste gets wrapped automatically. The wastes which need to be incinerated are burnt in the incinerator chamber available in the system. Therefore, this system will capably make the environment smart, clean and safe.

REFERENCES:

[1] B. Bharadwaj, M. Kumudha, N. Gowri Chandra, G. Chaithra, Automation of Smart waste management using IoT to support "Swachh Bharat Abhiyan" - A practical approach, Proc. 2017 2nd Int. Conf. Comput. Commun. Technol. ICCCT 2017. (2017) 318–320. https://doi.org/10.1109/ICCCT2.2017.7972300.

Title: Automation of Smart waste management using IoT to support

Authors: B. Bharadwaj, M. Kumudha, N. Gowri Chandra, G. Chaithra

Summary: This study presents a smart way to collect wastage in a smart city. The system is designed based on an IoT sensing prototype that measures the waste level of bins and sends the information to the server via internet services.

[2] T. Anh Khoa, C.H. Phuc, P.D. Lam, L.M.B. Nhu, N.M. Trong, N.T.H. Phuong, N. Van Dung, N. Tan-Y, H.N. Nguyen, D.N.M. Duc, Waste Management System Using IoT-Based Machine Learning in University, Wirel. Commun. Mob. Comput. 2020 (2020). https://doi.org/10.1155/2020/6138637.

Title: Waste Management System Using IoT-Based Machine Learning

Authors: T. Anh Khoa, C.H. Phuc, P.D. Lam, L.M.B. Nhu, N.M. Trong, N.T.H. Phuong, N. Van Dung, N. Tan-Y, H.N. Nguyen, D.N.M. Duc

Summary: In this work, an optimal algorithm combining graph theory and LR has been described, with the possibility of assessing the probability of a trash bin being fully based on the number of classes in the university. *is algorithm presents many advantages, as compared with the old waste collection methods.

[3] M. Karthikeyan, D. Eligo, S. Gebrehiyot, E. Bekele, D. Daniel, G. Dansa, GSM Based Smart Waste Bin Monitoring System In Ethiopia, VI (2019) 796–804.

Title: GSM Based Smart Waste Bin Monitoring System

Authors: M. Karthikeyan, D. Eligo, S. Gebrehiyot, E. Bekele, D. Daniel, G. Dansa

Summary: In this paper an Arduino sensor based automated garbage monitoring system is developed to monitor the garbage through the city. The system is more effective in informing

the municipalities about the status of the garbage at garbage bin location when the status of the garbage becomes full. Measuring the level of the garbage and informing the society and municipalities about at which level the garbage is and informing the driver to collect the garbage is the main feature that is developed in the project which makes the system more reliable and efficient.

[4] K. Pardini, J.J.P.C. Rodrigues, O. Diallo, A.K. Das, V.H.C. de Albuquerque, S.A. Kozlov, A smart waste management solution geared towards citizens, Sensors (Switzerland). 20 (2020) 1–15. https://doi.org/10.3390/s20082380.

Title: A smart waste management solution geared towards citizens

Authors: K. Pardini, J.J.P.C. Rodrigues, O. Diallo, A.K. Das, V.H.C. de Albuquerque

Summary:The proposed system uses sensor and communication technologies where waste data is collected from the smart bin, in real-time, and then transmitted to an online platform where citizens can access and check the availability of the compartments scattered around a city.

[5] I. Hong, S. Park, B. Lee, J. Lee, D. Jeong, S. Park, IoT-Based Smart Garbage System for Efficient Food Waste Management, Sci. World J. 2014 (2014). https://doi.org/10.1155/2014/646953.

Title: IoT-Based Smart Garbage System for Efficient Food Waste Management

Authors: I. Hong, S. Park, B. Lee, J. Lee, D. Jeong, S. Park

Summary: An IoT-based SGS for replacing existing RFID-based garbage collection systems. To provide differentiation from passive collection bins and other types of RFID-based food garbage collection systems, we also proposed components required in external and public environments and designed the SGS based on these components. The basic system structure of a SGB is a centralized structure in which information gathered in each bin is transferred to the server; we also designed a HSGB for improving the battery efficiency of each SGB.