SMART WASTE MANAGEMENT SYSTEM FOR METROPOLITAN CITIES

LITERATURE SURVEY

1. Smart Waste Management System using IOT

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The paper is based on the concept of Automation used in waste management system under the domain of Cleanliness and Hygiene. Dumping garbage onto the streets and in public areas is a common synopsis found in all developing countries and this mainly end up affecting the environment and creating several unhygienic conditions. In order to deal with these problems Smart netbin is an ideology put forward which is a combination of hardware and software technologies i.e. connecting Wi-Fi system to the normal dustbin in order to provide free internet facilities to the user for a particular period of time. The technology awards the user for keeping the surrounding clean and thus work hand in hand for the proper waste management in a locality. Smart netbin uses multiple technologies firstly the technology for measuring the amount of trash dumped secondly the movement of the waste and lastly sending necessary signals and connecting the user to the Wi-Fi system. The proposed system will function on client server model, a cause that will assure clean environment, good health, and pollution free society

2. IOT based Smart Waste Management

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Many times, in our city we see that the garbage bins or dustbins placed at public places are overloaded. It
creates unhygienic conditions for people as well as ugliness to that place leaving bad smell. To avoid such situations
the proposed project will be implemented for efficient waste management using IOT. These dustbins are interfaced
with arduino based system having ultrasonic wireless systems along with central system showing current status of
garbage, on mobile web application with Android app by Wi-Fi. Hence the status will be updated on to the App. Major
part of the proposed project depends upon the working of the Wi-Fi module; essential for its implementation. The main
aim of this project is to reduce human resources and efforts along with the enhancement of a smart city vision.

3. Challenges and Opportunities of Waste Management in IoT-Enabled Smart Cities: A Survey

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The new era of Web and Internet of Things (IoT) paradigm is being enabled by the proliferation of various devices like RFIDs, sensors, and actuators.

Smart devices (devices having significant computational capabilities, transforming them to `smart things') are embedded in the environment to monitor and collect ambient information. In a city, this leads to Smart City frameworks. Intelligent services could be offered on top of such information related to any aspect of humans' activities. A typical example of services offered in the framework of Smart Cities is IoT-enabled waste management. Waste management involves not only the collection of the waste in the field but also the transport and disposal to the appropriate locations. In this paper, we present a comprehensive and thorough survey of ICT-enabled waste management models. Specifically, we focus on the adoption of smart devices as a key enabling technology in contemporary waste management. We report on the strengths and weaknesses of various models to reveal their characteristics. This survey sets up the basis for delivering new models in the domain as it reveals the needs for defining novel frameworks for waste management.

4. Garbage Management Using IOT

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Brilliant Cities are being planned and worked for agreeable human residence. Among administrations that good urban areas can supply is that the naturally friendly waste/junk accumulation and getting ready. In this paper, we tend to inspire and propose a web of Things (IoT) – authorized framework engineering to accomplish dynamic waste accumulation and conveyance to handling plants or exceptional junk tips. Previously,

squander accumulation was dealt with in a fairly static way utilizing traditional operations look into the approach. As planned during this paper, these days, with the multiplication of sensors and actuators, as well as solid and universal portable correspondences, the Web of Things (IoT) empowers dynamic arrangements went for advancing the waste vehicle fleet live, accumulation courses and organized waste get. We propose the best question based dynamic booking model to address the difficulties of close constant planning driven by sensor information streams. An Android application alongside an easy to use GUI is produced and introduced with a specific end goal to demonstrate the practicality and assess a waste gathering situation utilizing trial information. At long last, the planned model's square measure assessed on factory made and real data from the town district of St. Petersburg, Russia. The models illustrate consistency and accuracy.

5. Cloud-based smart waste management for smart citie

Mohammad Aazam; Marc St-Hilaire; Chung-Horng Lung; Ioannis Lambadaris

With the ever increasing population, urbanization, migration issues, and change in lifestyle, municipal solid waste generation levels are increasing significantly. Hence, waste management becomes a challenge faced not only by the developing nations, but also the developed and advanced countries. The overall waste management involves three main types of entities: 1) users who generate waste, 2) waste collectors/city admin., 3) stakeholders. Waste management directly effects the lifestyle, healthcare, environment, recycling and disposal, and several other industries. Current waste management trends are not sophisticated enough to achieve a robust and efficient waste management mechanism. It is very important to have a smart way of managing waste, so that not only the waste status is notified in-time when to be collected, but also, all the stakeholders are

made aware in timely fashion that what type of waste in what quantity is coming up at what particular time. This will not only help in attracting and identifying stakeholders, but also aids in creating more effective ways of recycling and minimizing waste also making the overall waste management more efficient and environment friendly. Keeping all this in mind, we propose a cloud-based smart waste management mechanism in which the waste bins are equipped with sensors, capable of notifying their waste level status and upload the status to the cloud. The stakeholders are able to access the desired data from the cloud. Moreover, for city administration and waste management, it will be possible to do route optimization and select path for waste collection according to the statuses of waste bins in a metropolis, helping in fuel and time efficiency.