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“SMART WASTE MANAGEMENT SYSTEM FOR METROPOLITAN CITIES”

2019,Priyanka Mokale,”Smart Waste Management under Smart City Mission – Its Implementation and Ground Realities”.The idea of smart waste management is currently a new phenomena that is primarily used in metropolitan areas where garbage output is high and management of trash and awareness of its population is relatively low. Smart waste management contributes to a reduction in trash, which turns garbage into an energy source and keeps the tidy and clean of Every urban local body in the city. Depending on the technologies available, you'll need to invest. Spending money and developing a fresh approach to waste management is the primary goal of intelligent waste management. This essay is supported by both secondary and primary data. secondary information derived from a newspaper story, book, etc. As the discussion comes to a close, try to describe the variations between garbage management in small towns and issues facing metropolitan cities, how to handle them, and next present a suggestion for the handling of solid waste improvement.

2019,Manju Mohan, RM. Kuppan Chetty, Vijayram Sriram, Mohd. Azeem, P. Vishal and G. Pranav,”IOT Enabled Smart Waste Bin with Real Time Monitoring for Efficient Waste Management in Metropolitan Cities”,Garbage bins have been a part of our lives for decades and most of the time their condition is overfilled due to improper disposal.
Disposal, collection, and management of these items inevitably cause foul odours and unsanitary conditions.For environmental pollution. Therefore, in this post, we present a trash can design with real-time monitoring.An intelligent waste management system has also been proposed that takes advantage of recent automation and technological advances.
Internet of Things (IoT). Capacity sensors inside the container continuously monitor container levels in real timeCommunicate with the central cloud to which your containers are connected. Ultrasonic sensor is used for opening and closing Bottle lids if someone is near the bottle. Such a smart bin is connected to the cloud, The status of the container is the Android app or centralised server. Therefore, the designed intelligent container and the proposed waste management system have a better level.Smartness is centralised compared to metropolitan areas.

2021 ,V.R. Sankar Cheela, Ved Prakash Ranjan, Sudha Goel , Michele John ,Brajesh Dubey,”Journal of Urban Management” , To develop smart and sustainable cities, the Indian government has launched initiatives such as:Smart city and clean development mission. Solid Waste Management (SWM).It is one of the main focus areas of such initiatives. The Changing Dynamics of Municipal Waste Characterised by unplanned urbanisation and rapid urban population growth (cause migration) has been a major concern for urban municipalities to develop effective waste management plans. Formulation of long-term solid waste management plan in line with government policy.Initiative goals require an understanding of waste quantities, properties and presence of waste management practices. This white paper provides an overview of existing waste management activity, Financial and Institutional Demographics in Selected 6 Indian Smart Cities and Fields Survey on

evaluation of waste management system according to waste management regulations. partial to research.An intelligent approach to collecting data from local bodies and stakeholders. Benchmark strategy.The development of the waste management system is formulated based on the results of this analysis.Pathway discussions include waste characterization, funding sources, data technology, and Service level benchmarks for planning smart city integrated waste management systems.The results of this study should enable local governments to speed up their waste disposal systems.Transitioning to innovative and sustainable waste systems.

2016,Mohammad Aazam, Marc St-Hilaire, Chung-Horng Lung, Ioannis Lambadaris,"Cloud-based smart waste management for smart cities",With population growth and urbanisation,Migration Issues, Lifestyle Changes, Municipal Solid Waste
The number of generations increases significantly. therefore useless.Not only is management a challenge,Not only developing countries, but also developed countries and developed countriesCountry. Overall waste management consists of three main areas
Types of units: 1) users that generate waste, 2) wasteCollectors/Municipalities, 3) Stakeholders. Waste management has a direct impact on lifestyle, healthcare, environment and recycling and waste, and some other industries. Current waste Management dynamics are not sophisticated enough . A robust and efficient waste management mechanism.To prevent this from happening, it is important to devise ways to eliminate waste.However, you will only be notified of the status of your waste in time for collection.We will also notify all parties concerned of this in a timely manner.What type of waste is generated where and in what quantity a certain amount of time. Not only does this help with attraction,Identify stakeholders and also help create more effective Opportunities for recycling and waste minimization also make up the overall impressionMore efficient and environmentally friendly waste management.With this in mind, we propose cloud-based intelligent waste disposal Management mechanism installed in the trash can is a sensor capable of reporting waste level status;Upload status to cloud. Stakeholders can accessGet the data you need from the cloud. for the cityEnables management and waste disposalRoute optimization and corresponding selection of waste collection routes about the trash situation in big cities, helping with refuelling,time efficiency.

2016,Ms.A.Sivasankari, Mrs.V.Priyavadhana,"Smart planning in solid waste management for a sustainable smart city",Waste management is one of the most important factors is an important issue around the world, and thatIt is a serious problem in rapidly increasing developing countries.observed in the population. Garbage collection is complicated.A process that requires a lot of money and money
Advanced management of logistics. can be any city Smarter. Smart cities start with smart systems that work.For the people and the environment. City
A Successful Transition to "Smart"Adopt a bottom-up approach to improve critical systems, System-centric and data-centric top-down approaches. This Improving and consolidating various key cities.A system that runs step by step.The foundation for realising a smart city. to wear them Most Promising Residents, Companies, Organisations, etc.
In addition to fostering a thriving culture, the city must accomplish her three goals.Key features: more efficient, more livable, more consistent. By the end of his current decade, many Essential technologies for smart cities, such as monitoring and monitoring sensor technology, intelligent transportation systems and energy Building management systems are used everywhere in the continent. Many challenges, but many benefits

important. Beyond the obvious environmental benefits,System improvements can contribute to social equality.Through universal access to the city's public services. you save lives by providing faster access to emergency service. They make cities more resilient, Enable cities to prepare for danger and support urban recovery Service for later messes. you create something new.An economic zone that fosters growth and prosperity. In this paper An approach to intelligent waste collection is proposedImprove and optimise solid waste handling.

2019,G. Kalyan Chakravarthi, D. Satish Chandra, SS. Asadi,"Smart Solid Waste Management in New Capital City Amaravathi",Epidemic spread and spread Infectious diseases caused by improper waste disposal in cities.A region with a dramatic and exponential population growth. As it stands, this is garbage collectionA vehicle (GCV) collects garbage several times a week. By the way, the problem is the overflow of waste on the streets. therefore,To circumvent this limitation, another scheme is used in this dissertation Intelligent waste management with radio frequency identification devices (RFID), machine-to-machine (M2M), pneumatic systems,For Internet of Things (IOT), plasma technology,Details and best practices for smart disposal of solid waste A solid waste treatment technology is proposed based on Thullur, Rayapudi,Belagapudi or Nelapadu Village Where is one of theseA new system will be implemented. After collecting the questionnaire,Created based on quantitative researchThe results were analysed and confirmed by mathematical methodsSWM's advanced technology is superior to conventional techniques and techniques.

2021,Apeksha I. Raipure, Prof. Heena S. Sheikh,"Waste Minimization,Remanufacturing, Reuse, Recycling Based on IoT",As the world's population is increasing day by day, Every day the environment must be clean and hygienic for us to lead a better life. Due to rapid population growth Automatically request infrastructure improved and has more Facility. Achieving equilibrium between employment and the economy.A big concern for very fast countries is An increase in that population will eventually lead to development of new urban areas and cities. Smart city Made with various special components, powerful Waste management is one of those key considerations.In this case, waste minimization or waste management is one of the major problems facing the world for developed or developing countries.Cities create overflowing trash cans in addition to unpleasant odours, pollution and Unsanitary environment for various reasons. Efficient systems are well suited to handle these situationsDeveloped on the basis of the Internet of Things (IoT). In this Ideas and proposals for IoT using waste.Smart city minimization system. Primary purpose development of a system using Information collected to manage information collected by sensors Discuss waste and waste minimization Recycle, reuse, recycle.

2018,Behzad Esmaeilian, Ben Wang, Kemper Lewis, Fabio Duarte,Carlo Ratti, Sara Behdad,"Waste Management(The future of waste management in smart and sustainable cities:A review and concept paper)",The capability of clever towns in remediating environmental issues in trendy and waste control,in particular, is a critical query that desires to be investigated in educational studies. Built on an integrative evaluate of the literature, this take a look at gives insights into the capability of clever towns and connected groups in facilitating waste control efforts. Shortcomings of present waste management practices are highlighted and a conceptual framework for a centralised waste control

gadget is proposed, wherein 3 interconnected factors are discussed: (1) an infrastructure for correct series of product lifecycle information to facilitate complete visibility during the whole lifespan of a product,
(2) a hard and fast of recent commercial enterprise fashions depended on product lifecycle information to save you waste generation, and (3) an shrewd sensor-primarily based totally infrastructure for correct upstream waste separation and on-time series. The Proposed framework highlights the cost of product life cycle information in decreasing waste and improving waste healing and the want for connecting waste control practices to the complete product life-cycle. An instance of the usage of monitoring and information sharing technology for investigating the waste man-agement problems has been discussed. Finally, the achievement elements for enforcing the proposed frame-paintings and a few mind on destiny studies instructions had been discussed.

2021,Poornima M.Popali, Divya D.Borase,Saurabh P.Deore, Harsh M.Choadhary, Ashish Awate,”SOLID WASTE MANAGEMENT USING IOT",Solid waste management is a major concern for all developing countries. exponentially growing population
Urbanisation and economic development are increasing the generation of municipal solid waste especially smart for municipalities for cities, this is inherently a big problem, leading to many socio-economic and environmental problems. Therefore, in this paper the alternative When the amount of garbage generated falls below a certain level, a garbage collection route can be proposed to shorten the travel distance and required time.An overview of waste collection and solid waste segregation and management techniques.

2019,Rahul Moriwal,”Smart waste management using Wireless Sensor
Networks (WSN) and IoT (Internet of Things)”,Rapid boom in population, has brought about the mistaken waste control in towns ensuing in extended pests
and spreading of diseases. Nowadays, the Garbage Collecting Vehicle (GCV) collects the waste two times or three times in a week. So, the trouble is overflowing with wastage on the roads. Hence, to conquer this limitation, on this paper a scheme on clever waste control the use of Wireless Sensor Networks (WSN) and IoT (Internet of Things) is proposed. The rubbish boxes are deployed with sensors and are networked collectively using WSN. The sensors deployed withinside the rubbish boxes collect the facts for each decided interval. Once the brink is reached, it increases a request to the GCA (Garbage Collector
Agent). This agent collects the requests of all of the crammed motors and talks about the use of the IoT framework. The experimental simulation is finished in the proteus tool. A hardware prototype is advanced for the proposed framework. Analysis of the proposed scheme offers higher outcomes in waste control. “Cleanliness is subsequent to godliness” is stated and believed from the centuries. “In the method of the clever towns mission, the goal is to sell towns that offer core infrastructure and provide a respectable high-satisfactory of lifestyles to its citizens, a smooth and sustainable surroundings with the utility of clever solutions”. Smart towns don`t best suggest clever homes and clever parking regions; however , smarter waste control devices are likewise a main trouble to be addressed in growing a clever city. The clever waste control device that is proposed herein makes use of clever sensors to accumulate fill-stage facts from boxes and rubbish boxes, and ship it to a legal quantity in actual time. The legal telecel smartphone quantity that is located in the Waste Management Centre accumulates fill-stage statistics dispatched from a couple of boxes that are located at some stage in a city/locality. In this device, even the society

president will come to understand that whether or not the society`s dustbin is emptied through drivers or not. Whenever the dustbin gets empty the message can be forwarded to society president after which he may even provide remarks to their respective society truck drivers.

2020,Teoh ji Sheng, Mohammad Shahidul Islam, Norbahiah Misran, Mohd Hafiz Baharuddin, Haslina Arsha, MD. Rashedul Islam, Muhammad E. H. Chowdhury, Hatem Rmili and Mohammad tariqul Islam,"An Internet of Things Based Smart Waste Management System Using LoRa and Tensorflow Deep Learning Model",Traditional waste treatment systems run on a very daily schedule inefficient and expensive. Existing waste paper baskets have also proven useless in public spaces.Do not recycle waste properly. With the development of the Internet of Things (IoT) and artificial intelligence,(AI) Traditional waste management systems can be replaced with intelligent sensors built into the system.Perform real-time monitoring and enable better waste management. The purpose of this research is to developIntelligent waste management system with the LoRa communication protocol and TensorFlow-based deep learning model. LoRa sends sensor data and Tensorflow performs real-time object detection and classification. This trash can consists of multiple compartments for sorting waste such as metal, plastic, paper and general waste.Waste tray controlled by servo motor. Object detection and waste classification.It runs in the TensorFlow framework using a pre-trained object recognition model. This object detection model isTrain on garbage images to generate frozen inference figures used for object detection. This is being done now.
Via a camera connected to a Raspberry Pi 3 Model B+ as the main processing unit. the ultrasonic sensorBuilt into each waste compartment to monitor waste levels. Integrated GPS module Monitor container location and real-time. LoRa communication protocol is used for data transmissionAbout bin location, real time and fill level. RFID module is included for disposal purposesIdentification of administrative personnel.