DEPARTMENT OF INFORMATION TECHNOLOGY

IBM – LITERATURE SURVEY

PROJECT TITLE

IoT BASED SMART WASTE MANAGEMENT SYSTEM FOR METROPOLITAN CITIES

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S. No	Title of the Project	Advantages	Disadvantages	Technology used
1.	Smart Waste Management system using IoT	1)A reduction in the number of waste collections needed by up to 80%, resulting in less manpower, emissions, fuel use and traffic congestion. 2)A reduction in the number of waste bins needed. Analytics data to manage collection routes and the placement of bins more effectively.	1)System requires more number of waste bins for separate waste collection as per population in the city. This results into high initial cost due to expensive smart dustbins compare to other methods. 2)Sensor nodes used in the dustbins have limited memory size.	Internet of Things(IOT) technology
2.	A Smart Waste Management with Self-Describing Complex Objects	1)Saving time and money through automation. ... 2)Improving data accuracy and availability. ...	1)RFID tags can suffer from orientation issues as sometimes these tags do not connect with the readers when both are misaligned concerning each other. 2)The non-adoption of line of sight technology	Radio Frequency Identification(RFID) technology
3.	Volunteer GIS(VGIS)Based Waste Management	1)GIS technology has been recognised as one of the most promising approaches to automate the process of waste planning and management 2)Geographic Information Systems (GIS) are one of the most sophisticated modern technologies to capture, store, manipulate, analyse and display spatial data	1)GIS setup is complex, in addition to the cost of the equipment, there is the cost incurred in training. 2)Real-time parameters:The handling of growing datasets is an overall challenge to the GIS system	Volunteer GIS(VGIS) technology

4.	Artificial Intelligence Based Smart Waste Management.	1)Reduction in Human Error, 2Takes risks instead of Humans 3) Available 24x7, 4) Digital Assistance, 5) Faster Decision.	1)High Cost of Creation, 2)Difficulties with the software development for AI implementation	Artificial Intelligence(AI) technology.
5.	An Automated Machiine Learning Approach for Smart Waste Management.	1)Boost efficiency 2)Minimize the risk of human	1)Data Acquisition 2)AutoML needs more time to learn data. 3)High error susceptibility	Automated Machine Learning(AutoML) technology
6.	A Blockchain Based Approach Using Smart Contracts to Develop a Smart Waste Management System	1)Data Integrity 2)Free from Censorship 3)Blockchain technology is highly security and fast procressor	1)Power Consumption is high. 2)High cost. 3)Difficulty of Development	Block chain technology.
7.	Smart Dustbin Using GPS Tracking	1)Improved Time management 2)Better Route Planning 3)Reduced operational cost	1)Increasing cost of the dustbin. 2)If there are three different levels then three sensors has to be placed; one sensor for each level. Also user may cause damages to the sensors	GPS Tracking technology.
8.	IOT Based Smart Dustbin Monitoring With Tracking System Using ATMega 2560 Microcontroller	1)Low power consumption with fast start-up 2)Easier to use, with 8-bit microcontroller being less complex than 32/64 bit versions	1)Limited amount of flash memory 2)Naturally lacks incremental performance compared to higher bit microcontrollers	ATMega 2560 Microcontroller technology.

9.	A Software Defined Networking(SDN) Architecture For Smart Trash Can Using IOT	1)Centralized network provisioning 2)More Granular Security 3)Lower Operating Cost	1)SDN Requires a change in the entire network infrastructure to implement SDN protocol and controller. 2)SDN needs complete reconfiguration of the network.	Software Defined Networking (SDN)technology.
10.	Rashperry Pi- Based Smart Waste Management System Using IOT	1)Raspberry Pi is perfect fire adaptive technology and it is able to display images at high definition.	1)Not compatible with the other operating systems like WINDOWS	Raspberry pi technology.