Smart Waste Management System

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PRE-REQUISITE:

To complete our project, we must have knowledge of the following.We need to have basic knowledge of the following cloud services:

- IBM Watson IoT Platform
- Node-RED Service
- Cloudant DB

GiTHUB ACCOUNT :

➢ Open https://github.com in a web browser, and then select Sign up**.**

➢ Enter your email address.

➢ Create a password for your new GitHub account, and Enter a username**,** too. Next, choose whether you want to receive updates and announcements via email, and then select Continue**.**

➢ Verify your account by solving a puzzle. Select the Start Puzzle button to do so, and then follow the prompts.

➢ After you verify your account, select the Create account button.

➢ Next, GitHub sends a launch code to your email address. Type that launch code in the Enter code dialog, and then press Enter.

➢ I have created my github account with the email id ashadevi07062002@gmail.com

INSTALLATION OF IDE'S:

Python is available from its website python.org. Once there, hover your mouse over the Downloads menu, then over the Windows option, and then click the button to download the latest release.

LITERATURE SURVEY:

REVIEW- 1

Title Of The Paper:

Cloud-based Smart Waste Management for Smart Cities.

Name Of The Author:

Mohammad Aazam, Marc St-Hilaire, Chung-Horng Lung, Ioannis Lambadaris (2016) provides the idea of sensors-based waste bins, capable of notifying waste level status.

Problem Description:

An automatic waste bin and make use of cloud computing paradigm to evolve a more robust and effective smart waste management mechanism. Waste management is linked to different stakeholders, including recyclers, importers and exporters, food industry, healthcare, research, environment protection and related organizations, and tourism industry Mohammad Aazam et al proposed Cloud SWAM, in which each bin is equipped with sensors to notify its waste level. Different bins for each category of waste, namely: organic, plastic/paper/bottle, and metal. In this way, each type of waste is already separated and through the status, it is known that how much of waste is collected and of what type. The availability of data stored in the cloud can be useful for different entities and stakeholders in different ways. Analysis and planning can start from as soon as waste starts gathering

and up to when recycling and import/export related matters are conducted. The system Cloud SWAM provides Timely waste collection.

REVIEW 2:

Title Of The Paper :
Efficient Waste with an Intelligent Trash Can.

Name Of The Author:
W. A. L. Gayanthika, G. K. C. D. Maduranga, A. I. S. Silva, S. D. H. S. Wikramarathne, R. M. I. S. Ranasinghe.

Problem Description:
One of the most difficult issues in the Smart City is garbage collection. To optimise the trash collection logistic technique, we use our own genetic algorithm implementation. The proposed method allows for the calculation of more efficient garbage-truck routes. As a consequence, we give a series of simulations centred on the stated topic. All of our methodologies are integrated into an open source simulation framework that may be updated in the future. The environment must become cleaner and more hygienic as the world's population expands. In most areas, overflowing garbage cans create an unclean environment.

REVIEW 3:

Title Of The Paper:
A Survey on Garbage Collection and Monitoring System for Smart cities using IOT.

Name Of The Author:

Dr. K.G. Srinivasa Head of the Department; Department of Computer Science; M S Ramaiah Institute of Technology.

Problem Description:

The idea of smart garbage bins and systems have been in discussion for quite a long time. The technologies used at disposal to develop this smart system have also evolved, Internet of Things (IoT). Each idea seems to be similar but is slightly different at its core and our proposed work is no exception from the same. After the IoT field, finding its hold in our lives, this is our original plan for designing a smart garbage collection system which has provision for citizen participation and analysis of data for better decision making. At hardware level, the smart system is a garbage bin with ultrasonic sensor, a micro-controller and Wi-Fi module for transmission of data.

REVIEW 4:

Title Of The Paper:

IOT Based Smart Garbage Alert System using ARDUINO UNO.",Karadimas, Dimitris, "An integrated node for smart cities applications based on active RFID Tags use case on waste bins.

Name Of The Author:

Kumar, N. Sathish, "IOT Based Smart Garbage Alert System using ARDUINO UNO.",Karadimas, Dimitris, "An integrated node for smart cities applications based on active RFID Tags use case on waste bins." Region 10 conference (tencon), 2016.

Problem Description:

In this methodology, when the waste estimation over the dustbins is recognized, the framework along these lines cautions the embraced individual by strategies for GSM/GPRS. The structure works by utilizing a microcontroller which gives interface between the sensor and the GSM/GPRS framework. Also, an Android application is utilized to screen and join the important data identifying with the unmistakable component of waste found in various zones. With this framework, another client can choose the structure and not simply the manager. Regardless, anybody can make a record and the framework likewise surrender access to clients not expected for. This framework can be improved by setting two holders to self-rulingly collect dry and wet squanders. For this situation, the wet waste can be moreover masterminded and be utilized for the period of biogas, made intense by making it insignificant and fiscally astute.

REVIEW 5:

Title Of The Paper:

Smart garbage collection system in the residential area.

Name Of The Author:

Prajakta, G., J.K., and, M.S.: 'Smart garbage collection system in the residential area', IJRET: International Journal of Research in Engineering and Technology 2015.

Problem Description:

To accomplish this point of confinement, the framework utilizes a camera which is set at each position where rubbish is amassed close to a stack cell sensor orchestrated at the base of the waste holder. For this situation, the camera will constantly take surveys of the reject holder while the stack cell sensor takes the weight to pick whether full or not. Besides, an edge level is set which is utilized to

separate the result of the camera and weight sensor. Exactly when the edge is practiced, the controller transmits a message by strategies for the GSM module to the suitable master urging them that the junk holder is full and ought to be engineered. Reasonably, the waste archive total vehicle is dispatched to gather the deny utilizing a robot instrument. In any case, the catch is that the camera takes pictures all through disregarding how that its purpose of containment is come to in any case just contemplate the latest to pick gathering.

Paper Reference:

- Anchal Sharma, Rajiv Ganguly&Ashok Kumar Gupta (2019), "Characterization and Energy Generation Potential of Municipal Solid Waste from Non engineered Landfill Sites in Himachal Pradesh, India, Journal of Hazardous Toxic Radioactive Waste, 23(4), pp –04019008 1-15.

- Campos, L.B.; Cugnasca, C.E.; Hirakawa, A.R.; Martini, J.S.C. Towards an IoT-based system for Smart City. *IEEE Conf.* 2016, 129–130.

- Choudhary, G.B.; Jain, A.K. Internet of Things: A Survey on Architecture, Technologies, Protocols and Challenges. In Proceedings of the 2016 International Conference on Recent Advances and Innovations in Engineering (ICRAIE), Jaipur, India, 23–25 December 2016; pp. 1–8.