LITERATURE SURVEY

Date	19 September 2022
Team ID	PNT2022TMID34030
Project Name	Smart waste management system for Metropolitan Cities
Maximum Marks	2 Marks

Author Name: Mohammad Aazam

Year Of Publishing: 2016

Description:

  Mohammad Aazam provides the idea of sensors-based waste bins, capable of notifying waste level status. 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. Timely and efficient way of collecting waste leads to better health, hygiene, and disposal.

Author Name: R. Jenifer Prarthana ,Dr.N.Sathish Kumar

Year Of Passing: 2016

Description:

  R. Jenifer Prarthana uses tremendous power of RFID technology and presents the development of an electronic monitoring (e-monitoring) system to

overcome the problems in the conventional approach. The e-monitoring system is an embedded system that comprises of RFID technology interfaced with Arduino micro-controller and a web base which is completely computerized. Dr. N. Sathish Kumar et al. designed a smart dustbin in which the dust bin gets blocked when it reaches a threshold value. The ultrasonic sensor measures the waste volume .Microcontroller reads the data from sensor and alerts the server. For the verification process RFID tag (ID card of the cleaner) interrupts the RFID reader, the ultrasonic sensor checks the status of the dustbin and sends it to the web server. An android application is used to view the alerts and status at the server end. RFID technologies do not need line of sight and the RFID waste tag can be read without actually seeing it.

Author Name: Belal Chowdhury ,Morshed U. Chowdhury

Year Of Publishing: 2007

Description:

An RFID-based waste management system proposed by Belal Chowdhury and Morshed U. Chowdhury mainly consists of a smart waste (RFID) tag, a Reader and a waste management IT system (i.e., WMITS). A load cell is used to record the weight of bulk waste from each waste bin. A reader device attached to the PDA (Personal Digital Assistant) or a smart phone placed in waste collector vehicle (garbage/recycling truck) enables the chip to transmit its unique identification to the reader device, allowing the bin to be remotely identified. A RFID reader on each waste collector vehicle will ensure that the weight and identity of the waste is passed to the PDA and automatically logged into an integrated database server. The RFID reader can also request any additional information from the waste tag that is encoded on it. When robotic/lifting arms in the waste collector loaded onto the vehicle then the weighting measures the weight of each bin. The bin ID is then used to calculate actual waste disposal charges for each individual household. Belal Chowdhury and Morshed U. Chowdhury designed a five layer architecture for RFID and sensor based waste management system. The layers are named as physical layer, middleware layer, process layer, data access layer and user interface layer. The physical layer consists of the actual RFID hardware components and it include RFID waste tag, reader and antennas. Middleware layer is act as the interface between the RFID

reader, load cell sensor and waste management service providers (i.e., waste collectors, and municipalities) IT system. The important element of RFID and load cell sensor systems is middleware layer , which is viewed as the central nervous system from the waste management system perspective. This layer enables waste management service provider's (e.g., waste collector) a quick connectivity with RFID readers and load cell sensors and also the layer lowers the volume of information that waste management system applications need to process, by grouping and filtering raw RFID and load cell data from readers and sensors respectively. An application-level interface is provided by middleware layer for managing RFID readers, and load cell sensors for processing large volumes of waste data for their applications. The middleware layer is responsible for monitoring physical layer components.

Author Name: Fachmin F olianto, Yong Sheng Low and Wai Leong Yeow

Year Of Publishing: 2015

Description:

Fachmin F olianto, Yong Sheng Low and Wai Leong Yeow proposed Smart bin system has 3 –tier architecture. The ultra sound sensor installed in every Smart bin senses bin fullness and report readings and sensor statuses. The sensor reading is transmitted to the gateway nod which is installed in every sensor cluster. It forwards the information to the backend server. The analytics module in the back end server analyzes data collected by the bin sub system. The analytics module processes fullness readings, compares against predefined rules, and generates event upon exceeding threshold. The bin sub-system sends information to the workstation and it shows meaningful information to users through a graphical user interface.

Author Name: Keerthana betal

Year Of Publishing: 2017

Description:

Keerthana b et al designed internet of bins for trash management in India. The smart TRASH management system using sensor, microcontroller and other modules ensures emptying of dustbins appropriately when the garbage level reaches its maximum. Two threshold limits are set for the bins and an alert message is sent to the van that collects the trash if the waste amount reaches these thresholds. The system further allows the people to drop down the trash bags into the bins till it reaches the threshold limit .It waits for the acknowledgment from the van to clear off the bin and if the acknowledgment is not received it is sent again when it reaches threshold limit and the bin gets locked. When bin gets locked it displays the message "Overloaded". Then the dustbin will be monitored for a specific time and when not cleared within certain time limit, then a message will be sent to the higher authority who can take appropriate action.