**SMART WASTE MANAGEMENT USING IOT**

**Abstract**

Nowadays certain actions are taken to improve the level of cleanliness in the country. People are getting more active in doing all the things possible to clean their surroundings. Various movements are also started by the government to increase cleanliness. We will try to build a system which will notify the corporations to empty the bin on time. In this system, we will put a sensor on top of the garbage bin which will detect the total level of garbage inside it according to the total size of the bin. When the garbage will reach the maximum level, a notification will be sent to the corporation's office, then the employees can take further actions to full bin. This system will help in cleaning the city in a better way. By using this system people do not have to check all the systems manually but they will get a notification when the bin will get filled.

**Introduction**

IoT or Internet Things refers to the network of connected physical objects that can communicate and exchange data among themselves without the desideratum of any human intervention. It has been formally defined as an “Infrastructure of Information Society” because IoT sanctions us to amass information from all kind of mediums such as humans, animals, conveyances, kitchen appliances. Thus, any object in the physical world which can be provided with an IP address to enable data transmission over a network can be made part of IoT system by embedding them with electronic hardware such as sensors, software and networking gear. IoT is different than Internet as in a way it transcends Internet connectivity by enabling everyday objects that utilizes embedded circuits to interact and communicate with each other utilizing the current Internet infrastructure Since then the scope of IoT has grown tremendously as currently it consists of more than 12 billion connected devices and according to the experts it will increase to 50 billion by the end of 2020. With the advent of IoT both manufacturers and consumers have benefited. Manufacturers have gained insight into how their products are used and how they perform out in the real world and increase their revenues by providing value added services which enhances and elongates the lifecycle of their products or services. Consumers on the other hand have the ability to integrate and control more than one device for a more customized and improved user experience.

**EXISTING SYSTEM**

In the existing system the most of the people using the normal dustbin. It had to manually notice the bin and make empty. In the backyard dustbin collect all the waste from the people’s home backyard. In some area the machine that load the waste automatically in the dustbin. So that we cannot know current status of the bin. Some dust bin smell so much, So the human interaction will be so hard. Even in city the waste management will not so effective by this kind of problems. As we know the human handling of waste management will be difficult.

**EXISTING SYSTEM DISADVANTAGE**

* Human interaction will be difficult
* It having less efficient.
* Live monitoring will be not be possible.
* There is no alert if dust bin is full.

**PROPOSED SYSTEM**

We propose a smart waste collection system on the basis of level of wastes present in the wastebins. The data obtained through sensors is transmitted over the Internet to a server for storage and processing mechanisms. It is used for monitoring the daily selection of wastebins, based on which the routes to pick several of the wastebins from different locations are decided. Every day, the workers receive the updated optimized routes in their navigational devices. The significant feature of this system is that it is designed to update from the previous experience and decide not only on the daily waste level status but also the predict future state with respect to factors like traffic congestion in an area where the wastebins are placed, cost-efficiency balance, and other factors that is difficult for humans to observe and analyze. Based on this historical data, the rate at which wastebins gets filled is easily analyzed. As a result, it can be predicted before the overflow of wastes occurs in the wastebins that are placed in a specific location. Depending on economic requirements specified at early stages, the optimized selection of wastebins to be collected is expected.

**PROPOSED SYSTEM ADVANTAGE**

* It used for smart cities and smart classroom.
* It can give alert if the bin in full.
* It send the details of bin to the server when it is empty, half and full.
* Based on this data we can select the right time to empty the bin.
* It make the environment into better one.

**BLOCK DIAGRAM**

**POWER SUPPLY**

**GSM/GPRS**

**ULTRASONIC SENSOR**

**ARDUINO UNO**

**HARDWARE REQUIREMENT**

* Arduino uno
* Ultrasonic sensor
* gsm/gprs
* Power supply
* Trsnformer

**SOFTWARE REQUIEMNT**

* ARDUINO