**Location Based Garbage Management System for Smart City**

**Date**: 22-02-2023

**Guide**: NAVYAMOL KT

1. **Project Overview?**

This Waste management is one of the serious challenges of the cities, the system now used in cities, we continue to use an old and outmoded paradigm that no longer serves the entail of municipalities, Still find over spilled waste containers giving off irritating smells causing serious health issues and atmosphere impairment. The Smart Waste Management System will simplify, with the Web applications and mobile phone, the solid and hydric waste inspecting process, and the management system of this presentation's total collection process. The proposed system is a GPS based. The suggested device and implementation will track waste storage and monitor the vehicle's waste driver. This method helps to make the customer aware of accountability behind the job such as the system for solid waste inspection and management, integrating communications technology for truck control systems such as GPS.

1. **To what extend the system is proposed for?**

* Solid waste management can be broadly categorized as segregation, collection, and transportation. And also all the house owners register the application based on the area.
* The proposed system, where admin manage the garbage app for full online based monitoring and analyze the system. Her admin handle bins, driver, complaints from user and work report from driver.
* The server will collect the data and store them only a database. This data will be analyzed and displayed on two different dashboards that can be accessed by the workforce and clients.
* Using data analytics, reports will be generated which can be monitored by the admins through the admin dashboard.
* Based on the data collected, garbage trucks can be given routes generated through various algorithms and google maps API to efficiently route through all necessary garbage bins and finally reach the dumping site.
* Machine learning can be used to classify and segregate waste in a number of ways. One approach is to use computer vision techniques, such as image recognition or object detection, to identify different types of waste in images or videos. These algorithms can be trained on large datasets of waste images and can automatically classify new images into different waste categories, such as paper, plastic, glass, and metal.
* **Chat Bot -**Answering queries based on AI

1. **Specify the Viewers/Public which is to be involved in the System?**

The General public are involved in the system

1. **List the Modules included in your System?**

**Administrator: -**

* Login
* Create Garbage bin
* Manage garbage bin
* Manage driver
* View Garbage Report
* View complaints from public
* Employee
* Waste Classification and Segregation
* Google Map
* QR code
* Chat Bot

**General Public: -**

* Register
* Login
* Register complaint
* My complaint & status

**Driver: -**

* Login
* Check daily work updates
* Choose best route
* Update garbage load

**Employee: -**

* Login
* Check daily work updates
* Update garbage load

1. **Identify the users in your project?**

The users are the General public and the agents

1. **Who owns the system?**

The Administrator owns the Garbage management system

1. **System is related to which firm/industry/organization?**

*The system is related to industries. Industries in garbage management establishment engaged in the collection , treatment, and disposal of waste materials.*

1. **Details of person that you have contacted for data collection?**

* Sheeja HK

8086810665

Cleaning Staff

1. **Questionnaire to collect details about the project? (**min 10 questions, include descriptive answers, attach additional docs (e.g. Bill receipts, certificate models), if any?)
   * + 1. **Is it necessary to collect plastic waste and organic waste separately?**

Yes, plastic waste and organic waste are collected separately.

* + - 1. **How is the waste collected?**

Our Workers reach out to houses to collect the waste.

* + - 1. **Will your agents visit homes to take waste?**

Yes.

* + - 1. **How much is the cost for taking waste?**

It depends on the weight of waste.

* + - 1. **Does the cost vary with the weight of waste?**

Yes, cost varies with weight of waste

* + - 1. **Where is waste deposited?**

Wastes are taken to factories to recycle

* + - 1. **Do you provide biogas facilities?**

No

* + - 1. **Waste collected per day or weekly?**

Waste is collected twice a week.

* + - 1. **Is it government organized system?**

Yes, government organized system.

* + - 1. **Have you ever been educated on proper waste disposal by the council?**

Yes

* + - 1. **In what type of container do you collect waste?**

Waste Basket, Plastic bags

* + - 1. **What type of solid waste comes out from your household?**

Food waste, plastic (bags/bottles), paper & carton.

* + - 1. **How do you currently handle waste management in your household or organization?**

I live in a rented apartment and I practice source separation. I separate my waste into different categories, such as recyclables, organic waste, and non-recyclables. I also try to reduce waste generation by using reusable bags and containers.

* + - 1. **Do you separate your waste into different categories (e.g. recyclables, non-recyclables, hazardous waste)?**

Yes, I do separate my waste into different categories. I put recyclables like paper, plastic, and metal into a separate bin. Organic waste like food scraps and yard waste goes into a compost bin, and non-recyclables like sanitary waste and broken glass are put into the regular waste bin**.**

* + - 1. **How familiar are you with the different waste types and their associated classifications (e.g. organic waste, plastic waste, e-waste)?**

I am quite familiar with different waste types and their associated classifications. Organic waste is biodegradable waste that comes from living organisms, plastic waste is waste made of synthetic or semi-synthetic materials, and e-waste is electronic waste that includes devices like computers, phones, and televisions.

* + - 1. **How do you currently dispose of hazardous waste (e.g. batteries, chemicals)?**

Answer: I collect my hazardous waste separately and take it to a local hazardous waste collection center for proper disposal. This includes items like batteries, CFL bulbs, and chemicals.

* + - 1. **Have you ever encountered challenges with waste segregation and classification?**

Yes, I have encountered challenges with waste segregation and classification. Sometimes it can be difficult to determine which bin a particular item should go into, especially if it is a complex item made of multiple materials.

* + - 1. **Would you be willing to learn more about waste classification and segregation techniques?**

Yes, I would be willing to learn more about waste classification and segregation techniques. I think it is important to stay informed about new developments in waste management.

* + - 1. **How do you think technology, such as machine learning algorithms, could improve waste classification and segregation?**

I think technology like machine learning algorithms could improve waste classification and segregation by making the process more accurate and efficient. For example, machine learning could be used to identify the different materials in a complex item and determine the appropriate bin for it.

* + - 1. **How do you think waste classification and segregation can contribute to environmental sustainability?**

I think waste classification and segregation can contribute to environmental sustainability by reducing the amount of waste that ends up in landfills, conserving natural resources through recycling, and reducing greenhouse gas emissions from waste. Proper waste management practices can help create a cleaner and healthier environment for people and wildlife.