

TITLE

Building a Waste Management Portal with Zone-Based Mapping

Team Members' Names

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1. Abstract

This project aims at addressing waste management problems in a practical and community-based way. Well, we are building a simple and user-friendly website where people can upload photos of the areas where litter is prevalent. Depending on the severity, these areas are called Red, Yellow, or Blue Zones. Zones will be displayed on an interactive map helping us visualize the problem areas and where to focus action.

We'll be doing two field visits: one before we launch the portal to get an idea of the current waste scene and engage with the community, and one after the portal is live to see how things have changed. Node and a few other tools are used for building the portal. js for backend handling and Bootstrap for frontend display with seamless efficiency and responsiveness. We aim to build a system that helps diagnose the problem and in the end have a way for the community to start solving the problem.

2. Introduction

Waste management is one of those daily problems that, if not managed properly, could have a huge impact on our environment. With this project, we're hoping to develop a site where people can report and track waste-heavy areas in their neighborhood. Using technology and getting involved locally, our goal is to make it simple for everyone to do their part in cleaning up their local environment, to get dirty and do their part!!! Users will be able to upload photos, pinpoint areas that have waste trouble and view these problem areas on a map.

3. Objectives

- To set up a website for reporting areas prone to waste with pictures and tags.
- To involve the community in 'seek and find' waste issues and waste management/activities.
- If the maps can enable clear visualisation of problem places for better waste disposal management.

- The objective of the portal is to study the effect of real-life direct feedback from two educational tours—one prior and one after the launch of the portal.

4. About Data Collection

1. We are dividing our data collection into two parts

Before the Portal Launch:

2. We'll be going into neighborhoods to look for places with a lot of waste buildup. We'll take photos, record data and speak to residents during these visits to better understand the challenges they face.

After the Portal Launch:

3. After the portal goes live, we'll return to those same areas to see what has changed. This will give us an indication of how effective the portal has been and if people are finding it useful.

5. Methodology

Here's our plan for how to tackle this project:

Field Visits Prior to Implementation:

- We'll travel to local communities to collect data and get a sense of the waste hotspots.
- Talking to residents, we'll be able to hear what their struggles and concerns are with waste management.

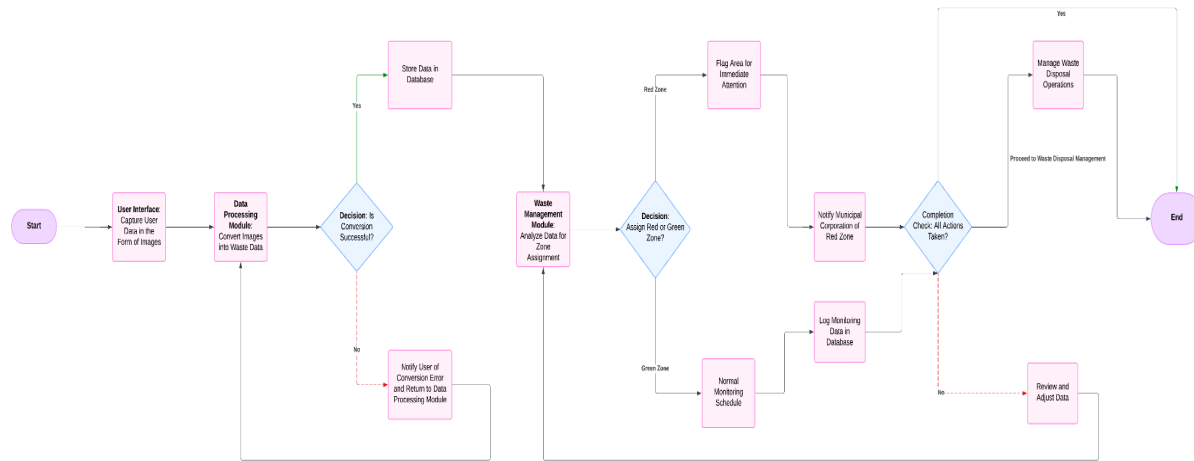
Website Development:

- We're using Node.js to manage the backend functionality of the website, assuring scalability and performance.
- On the front end, we will use Bootstrap, so our design will be simple and responsive, which means it will look good with different devices.
- It will include an interactive map to show the waste zones.

Testing and Feedback:

- We'll beta test the website ourselves and get input from a small number of users to help get it just right before the full launch.

6. Architectural Diagram



7. Conclusion

This project is not only about the technology — it's about building a platform where communities can unite in order to work towards a common solution. The portal will both help people report waste issues and help create cleaner environments. Insights from visits to the field, along with user feedback, will inform ongoing improvement of the platform so we can make it as effective and impactful as possible.