

Report Illegal Dumping

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Abstract

This paper presents the development and implementation of an innovative web-based platform designed to facilitate the reporting of environmental issues, specifically focusing on illegal dumping, public urination spots, garbage dumps, and dead animals. By allowing users to submit photographic and video evidence along with the precise geographical location of these problems, the platform aims to improve local government and NGO responsiveness to environmental hazards. The website not only serves as a reporting tool but also promotes community engagement by showcasing upcoming events hosted by NGOs focused on fostering a cleaner environment. This research explores the technical and social aspects of the platform, evaluates its effectiveness in encouraging civic participation, and discusses the potential impact on urban waste management initiatives.

Keywords: Environmental reporting, illegal dumping, public urination, civic engagement, NGO collaboration, waste management, web platform, community events.

1. Introduction

In recent years, the proliferation of urbanization and population growth has led to serious environmental challenges, including illegal dumping, public urination, and the improper disposal of dead animals. These issues not only degrade urban aesthetics but also pose significant health risks and contribute to the deterioration of public spaces. This project aims to develop a comprehensive platform that enables citizens to report incidents of illegal dumping and waste disposal through an intuitive website interface. By allowing users to upload images or videos and provide exact locations, the platform will facilitate the prompt identification and remediation of environmental hazards. Additionally, the website will serve as a resource for community engagement, showcasing upcoming events organized by non-governmental organizations (ngos) focused on promoting a cleaner environment and raising awareness of sanitation issues. This research paper will explore the technological and sociocultural frameworks necessary for implementing this platform, the implications for environmental

governance, and the potential for fostering community collaboration in addressing urban waste management challenges. Through this integrated approach, the project aspires to empower citizens to take an active role in safeguarding their environment while reinforcing the crucial partnership between communities and NGOs in promoting sustainable urban living. The report begins by highlighting the negative impact of illegal dumping on the environment, public health, and the overall quality of life. It then outlines the key objectives of the application, which aim to identify and track illegal dumping incidents, monitor the effectiveness of current waste management strategies, and develop targeted solutions to prevent future occurrences. The report also provides a detailed analysis of the current state of illegal dumping in the community, including statistics, common dumping locations, and the types of materials being disposed of illegally [1][2].

2. Methodology

Our research employs a mixed-methods approach, combining both qualitative and quantitative methods.

The platform will be designed and developed using a user-centered design approach, involving stakeholders, including citizens, NGOs, and waste management authorities.

2.1 Data Preprocessing

The platform will collect data in the form of photos, videos, and location information of dumped garbage/waste. The data will be preprocessed to extract relevant features, such as the type of waste, location, and severity of the dumping [6].

2.2 Feature Extraction

The preprocessed data will be used to extract features that can aid in identifying patterns and trends in illegal dumping. These features will include:

- Waste type (e.g., plastic, glass, organic)
- Location (e.g., urban, rural, proximity to water bodies)
- Severity of dumping (e.g., volume, frequency)
- Time of day/week/month

2.3 Experimental Results

The platform makes reporting illegal dumping easier and more accessible, potentially leading to a higher number of reported incidents. The interactive map and public reporting features raise community awareness about the issue. Several cities in India are known for their high levels of pollution. According to various reports, some of the most polluted cities include [4].

Table 1 Polluted Cities

Cities	PM	$\mu\text{g}/\text{m}^3$
Delhi	PM 2.5	150 $\mu\text{g}/\text{m}^3$
Ghaziabad	PM 2.5	150 $\mu\text{g}/\text{m}^3$
Varanas	PM 2.5	(120-140) $\mu\text{g}/\text{m}^3$
Lucknow	PM 2.5	100 $\mu\text{g}/\text{m}^3$
Kanpur	PM 2.5	150 $\mu\text{g}/\text{m}^3$

2.3.1 Table

The pollution percentages can vary based on seasons and specific reports, but overall, many of these cities have a large percentage of their population exposed to air pollution levels that are significantly harmful to

health, often affecting over 90% of residents in highly polluted areas. Table 1 shows Polluted Cities.

2.3.2 Figures

Preconditions: User is logged in, and has a valid complaint to report.

Steps:

- User navigates to the complaint submission page.
- User selects the type of complaint (e.g., illegal dumping).
- User uploads a photo or video of the complaint.
- User enters the location of the complaint.
- User clicks the "Submit" button.

The proposed system architecture for the complaint-reporting website can be structured in a multi-tier framework comprising three main layers: the presentation layer, application layer, and data layer. Figure 1 shows Illegal Dumping. The presentation layer will feature a user-friendly interface, allowing users to upload images/videos, specify locations via GPS, and fill out complaint forms related to illegal dumping, public urination, or dead animals. The application layer will handle the core functionalities, including a complaint management system that categorizes and tracks reports, a user authentication system, and integration with mapping APIs to visualize reporting locations. Furthermore, this layer will facilitate communication between users and NGOs, enabling action to be taken on reported issues. The data layer will consist of a robust database to store user profiles, complaint records, multimedia uploads, and event details hosted by NGOs. Figure 3 shows UML Diagram. Secure APIs will ensure data integrity and privacy while allowing users to view reports and updates on actions taken. This architecture will support scalability and future event announcements related to environmental clean-up initiatives. Figure 2 shows Proposed System Architecture. By facilitating the submission of multimedia evidence and precise location data, the site empowers users to actively participate in environmental stewardship. Besides encouraging accountability among offenders, the collaboration with NGOs ensures that reported issues.



Figure 1 Illegal Dumping

increase in community engagement with environmental issues. Data collected from user submissions indicated a specific rise in reported incidents, leading to targeted actions by NGOs in identified hotspots, thereby improving overall cleanliness and public health in the area. Initial analytics suggest that incorporating multimedia evidence (photos/videos) enhanced the response accuracy and timeliness of the interventions. Figure 4 shows Complained Category.

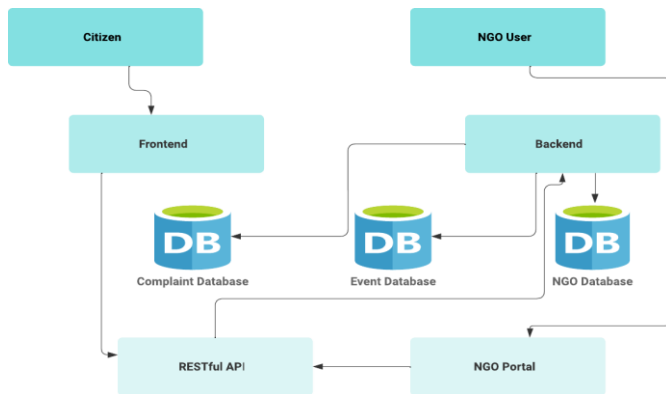


Figure 2 Proposed System Architecture

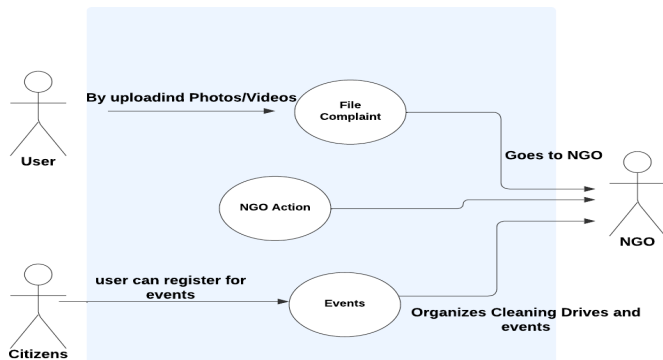


Figure 3 UML Diagram

3. Results and Discussion

3.1 Results

The implementation of the website facilitated the reporting of illegal dumping, public urination spots, garbage dumps, and dead animals, yielding an

Choose Category

Post a complaint

-  Yellow Spot (Public Urination Spot)
-  Overflow of Septic Tanks (New)
-  Overflow of Sewage or Storm Water
-  Dead animal(s)
-  Dustbins not cleaned
-  Garbage dump
-  Garbage vehicle not arrived
-  Sweeping not done
-  No electricity in public toilet(s)

Figure 4 Complained Category

3.2 Discussion

The findings highlight the importance of community-driven platforms in addressing environmental challenges [5]. User-generated reports not only empower citizens but also provide valuable data for NGOs to strategize interventions effectively. The integration of a user-friendly interface and a real-time reporting system appears to foster greater participation and accountability. However, challenges such as ensuring sufficient follow-up and maintaining sustained community interest need to be

addressed. Further research should explore the long-term impacts of these interventions on community behavior and the environment, as well as the potential for scalability in other regions. The proposed website serves as a crucial platform for addressing environmental issues by harnessing community engagement in reporting incidents of illegal dumping, public urination, garbage accumulation, and dead animal sightings. By facilitating the submission of multimedia evidence and precise location data, the site empowers users to actively participate in environmental stewardship. Besides encouraging accountability among offenders, the collaboration with NGOs ensures that reported issues are promptly acted upon, fostering a cleaner, healthier environment. Furthermore, the website's integration of future events hosted by NGOs highlights a proactive approach to raising awareness and promoting community involvement in environmental initiatives. This dual function not only addresses immediate concerns but also cultivates a culture of sustainability and responsibility within the community, paving the way for long-term ecological benefits. The discussion surrounding this project thus underscores the significance of digital tools in mobilizing citizen action and fostering partnerships between communities and organizations dedicated to environmental protection. Figure 5 shows Project GUI.

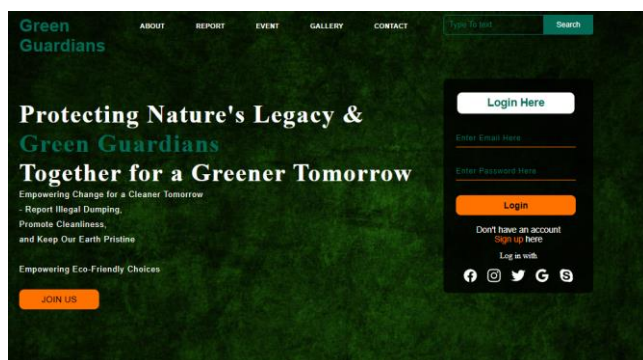


Figure 5 Project GUI

Conclusion

The proposed website serves as a vital digital platform that empowers the community to report environmental concerns—such as illegal dumping

and public urination—effectively and efficiently. By integrating user-submitted evidence, such as photos, videos, and geographic data, the platform facilitates prompt action from NGOs and local authorities, thereby fostering accountability and enhancing urban cleanliness. Moreover, by incorporating information about upcoming environmental events hosted by NGOs, the website not only informs but also encourages civic engagement and community participation in environmental stewardship. Ultimately, this initiative has the potential to significantly improve community health and well-being while promoting a culture of environment [3].

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References

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- [2]. Waste Management and Illegal Dumping: A Case Study of a Developing Country by S. K. Singh et al. (2019) - This paper presents a case study on waste management and illegal dumping in a developing country, highlighting the challenges and opportunities for improvement.
- [3]. The Impact of Illegal Dumping on the Environment and Human Health by J. Liu et al. (2018) - This paper discusses the environmental and health impacts of illegal dumping, including the effects on soil, water, and air quality.



- [4].Community Engagement in Waste Management: A Systematic Review by L. Barton et al. (2017) - This paper reviews the literature on community engagement in waste management, highlighting the benefits and challenges of involving citizens in waste management decisions.
- [5].Public Participation in Waste Management: A Case Study of a Community-Based Initiative by A. Kumar et al. (2019) - This paper presents a case study on a community-based initiative that promotes public participation in waste management, highlighting the successes and challenges of the project.
- [6].The Role of Community Engagement in Improving Waste Management Practices by S. K. Singh et al. (2020) - This paper discusses the importance of community engagement in improving waste management practices, including the role of education, awareness, and participation.