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A Mini Project Documentation Report

EcoTrack: A Smart Waste Management System

In Partial Fulfillment of the Requirements for the Subject
GE 3219 - The 21st Century IT Skills

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Introduction:

Waste management has become a pressing issue in many communities due to the continuous increase in population and daily consumption. Large amounts of waste are generated every day, and improper disposal practices contribute to environmental pollution, health risks, and unsanitary living conditions. Despite the availability of waste collection services, poor waste segregation and limited public awareness remain common problems.

This issue is highly relevant because ineffective waste management directly affects public health, environmental sustainability, and overall community well-being. Communities with poor waste disposal practices experience flooding due to clogged drainage systems, increased disease risks, and damage to ecosystems. The groups most affected by this problem include local residents, waste management authorities, and the environment itself.

Problem Description:

Improper waste management in communities is largely caused by a lack of waste segregation, inconsistent disposal practices, and limited access to information regarding proper waste handling. Household waste is often mixed together, making recycling difficult and increasing the amount of waste sent to landfills. Public spaces also suffer from improper disposal, leading to unsightly surroundings and health hazards.

Observations / Data

- Communities generate large amounts of solid waste daily
- Waste is often disposed of without proper segregation

- Recycling facilities and opportunities are underutilized
- Improper disposal leads to clogged drainage and pollution

Limitations or Challenges

- Limited awareness of proper waste segregation practices
- Inconsistent waste collection schedules
- Lack of accessible recycling centers
- Low participation of community members in waste management initiatives

Proposed Solution

To address these challenges, this project proposes **EcoTrack**, a technology-enabled waste management system designed to support proper waste disposal and segregation within communities. EcoTrack aims to provide residents with accessible information, reminders, and tools that promote responsible waste management behavior.

EcoTrack functions as a centralized platform where users can learn about proper waste segregation, track collection schedules, and locate nearby recycling facilities. By integrating technology into everyday waste management practices, the system encourages consistency, awareness, and participation.

Target Users

- Community residents
- Households
- Local waste management offices

Features List

- Waste segregation guidance
- Waste collection schedule notifications
- Recycling center locator
- Community reporting and participation tools

Expected Impact

The implementation of EcoTrack is expected to reduce improper waste disposal, improve waste segregation compliance, increase recycling participation, and promote cleaner and healthier communities. Over time, the system can contribute to improved environmental sustainability and public health outcomes.

Conclusion

Waste management is a critical issue that requires practical and sustainable solutions. EcoTrack offers a technology-based approach that supports proper waste disposal through education, organization, and community involvement. By promoting responsible waste management practices, the system has the potential to improve environmental conditions and enhance the quality of life in communities.

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