

## ABSTRACT

The integration of advanced technology in plastic waste management systems presents a promising solution to address the global issue of plastic waste pollution. This abstract introduces two innovative approaches towards responsible waste disposal. Firstly, an AI-powered camera system is employed at pilgrimage sites to incentivize pilgrims to dispose of their plastic bottles responsibly. By scanning bottles upon entry and exit, the system calculates a minimum deposit, encouraging users to reclaim their refund upon proper disposal. Secondly, a smart bin monitoring system, utilizing ultrasonic sensors, facilitates efficient waste collection by notifying administrators via WIFI when bins reach capacity. This proactive approach prevents overflow, optimizing waste management processes. Additionally, the platform offers users the flexibility to either drop off their waste at designated locations or utilize a convenient pick-up service, fostering community engagement in recycling efforts. By harnessing technology and community-driven initiatives, these solutions represent significant steps towards a more sustainable and cleaner environment. Ultimately, these initiatives aim to revolutionize plastic waste management, increase recycling rates, and cultivate environmental stewardship within communities. Aranyani goes beyond technology, striving to foster eco-awareness and responsible practices. It envisions a harmonious coexistence between nature and human exploration, safeguarding the fragile hillside ecosystems.