

# Flutter Based Android Application for Smart Waste Management System

Renu Dandge<sup>1</sup>, Fardeen Shaikh<sup>2</sup>, Tejasvini Dhoble<sup>3</sup>, Sakshi Sable<sup>4</sup>, Snehal Dusane<sup>5</sup>

Department of Computer Engineering<sup>1,2,3,4,5</sup>

Suman Ramesh Tulsiani Technical Campus Faculty of Engineering, Khamshet, Pune, Maharashtra, India

**Abstract:** This abstract introduces a Flutter-based Android application designed for efficient waste management through QR-based dustbin location tracking and alerting. The application aims to revolutionize waste disposal by leveraging QR codes to identify and monitor dustbin locations. Users can scan QR codes placed on designated bins, enabling real-time tracking and status updates. The system generates alerts when bins reach capacity, notifying authorities for timely cleaning interventions. Additionally, the application integrates a unique feature for waste material sales, connecting users with recyclers. This Recycler Management System promotes sustainability by streamlining the recycling process and fostering collaboration between waste producers and recyclers. Overall, the Flutter Android application provides a comprehensive solution for smart waste management, incorporating tracking, alerts, and a marketplace for waste material transactions. In summary, the proposed Flutter-based application addresses key challenges in waste management through an innovative approach. By combining QR technology, real-time tracking, and a marketplace for waste material, the system not only facilitates efficient cleaning operations but also contributes to sustainable practices by promoting recycling. This holistic approach aligns with contemporary environmental priorities, offering a user-friendly and integrated solution for optimizing waste disposal processes

**Keywords:** Hair fall reduction, Herbal hair oil, Combing assay, Hair growth, clinical study

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