

Software Requirements Specification (SRS)

Project Title: EcoTrack - Smart Waste Segregation and Pickup Scheduler

1. Introduction

1.1 Purpose

To develop a smart waste management system where users can schedule pickups and admins can manage operations.

1.2 Scope

EcoTrack will have modules for registration, pickup scheduling, complaint handling, admin dashboard, and analytics.

1.3 Definitions, Acronyms, and Abbreviations

- Pickup: A scheduled waste collection task.
- EcoPoints: Points awarded for proper waste segregation.
- Resident/User: A citizen using the system to manage waste.
- Admin: Authorized person who manages pickups and complaints.
- Agent: Person who performs the waste collection.
- UI: User Interface.
- API: Application Programming Interface.

2. Overall Description

2.1 Product Perspective

EcoTrack is a new web/mobile app for managing smart waste pickup scheduling and segregation tracking.

2.2 User Classes and Characteristics

Residents, Admins, and Pickup Agents are the primary users of the system.

2.3 Operating Environment

Web: Chrome/Firefox, Mobile: Android/iOS, Backend: Node.js or Django, Database: MongoDB/MySQL

3. Functional Requirements

- FR1: User registration with email/phone verification.
- FR2: Secure user login and logout.

- FR3: Scheduling pickups by date and time slot.
- FR4: Logging type of waste: wet, dry, recyclable.
- FR5: Users can raise complaints.
- FR6: Display EcoPoints for compliant behavior.
- FR7: Admin dashboard for analytics.
- FR8: Pickup route assignment by admin.
- FR9: Agent can update pickup status.
- FR10: Notifications and alerts via SMS/Email.

4. Non-Functional Requirements

- NFR1: Response time must be < 2 seconds.
- NFR2: Support for 500+ concurrent users.
- NFR3: Secure storage of user data.
- NFR4: Mobile-responsive UI design.
- NFR5: 99% system uptime.
- NFR6: Modular architecture for easy maintenance.

5. System Features

- User authentication
- Pickup scheduling interface
- Complaint form
- Real-time notifications
- Reward points tracking
- Route management for agents