

Software Requirements Specification

1. Introduction

1.1 Purpose

This document outlines the system requirements for a digital CSR platform aimed at mobilizing student and community volunteers to support NGO-led water resilience activities. It helps corporations fulfill Schedule VII mandates through verifiable impact, bridges students with opportunities, and provides NGOs with volunteer management tools.

[Note]-Schedule VII defines what kinds of social, environmental, and community development activities companies can legally fund under their CSR obligations.

1.2 Scope

The platform will:

- Enable NGOs to list water-related volunteer events
- Match volunteers (students/local communities) based on interests and skills
- Provide dashboards for corporates to monitor CSR impact
- Offer student incentives like internships, mentorships, and recognitions
- Ensure compliance with Schedule VII, ESG, and BRSR guidelines

Guidelines



Schedule VII of the Companies Act, 2013 (India)

- **Purpose:** Defines the list of activities that qualify as Corporate Social Responsibility (CSR) for companies under Section 135 of the Companies Act.
 - **Relevant Areas:** Includes water conservation, environmental sustainability, disaster management, and rural development.
 - **Why It Matters:** Companies can fund projects like afforestation, rainwater harvesting, or awareness campaigns on water security under this provision.
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ESG – Environmental, Social, and Governance

- **Purpose:** A global standard used by investors and companies to measure sustainability and ethical impact.
 - **Breakdown:**
 - **Environmental** – Water usage, pollution control, biodiversity impact
 - **Social** – Community engagement, labor practices, volunteerism
 - **Governance** – Ethics, compliance, transparency
 - **Why It Matters:** Companies with strong ESG performance often see better investment appeal and reputational value.
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BRSR – Business Responsibility and Sustainability Report

- **Introduced by:** SEBI (Securities and Exchange Board of India)
- **Purpose:** Mandatory ESG disclosure format for the top 1,000 listed companies in India.
- **Focus Areas:**
 - Climate action, water resource use, social capital (e.g., volunteering)
 - Includes quantifiable KPIs (e.g., % of community outreach via CSR)
- **Why It Matters:** CSR activities logged on your platform can directly feed into BRSR metrics for corporate compliance.

1.3 Target Audience

- Product managers
- Software developers and testers
- NGO partners
- Corporate CSR stakeholders
- Compliance officers

- End-user representatives (students, volunteers)

1.4 Definitions & Acronyms

- **CSR** – Corporate Social Responsibility
 - **NGO** – Non-Governmental Organization
 - **ESG** – Environmental, Social, Governance
 - **BRSR** – Business Responsibility and Sustainability Reporting
 - **RWA** – Resident Welfare Association
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2. Overall Description

2.1 Product Perspective

A web-based multi-tenant SaaS(Software as a Service) platform with modular dashboards for NGOs, students, and corporates, supported by mobile apps (Android/iOS) for on-the-ground engagement and check-ins.

2.2 Product Functions

- Event listing and management by NGOs
- Volunteer onboarding and gamification
- Real-time CSR dashboards for corporates
- Student engagement via point systems, internships, and leaderboards
- Matching engine based on location, skills, and interest

2.3 User Classes and Characteristics

User Type	Description	Key Needs
Students	College youth looking for experience	Recognition, internships, mentorship

NGOs	Organizers of water-resilience events	Volunteer management, impact tracking
Corporates	CSR/ESG teams	Schedule VII compliance, impact reporting
Admin	Platform operator	Moderation, analytics, system control

3. Functional Requirements

3.1 User Registration and Profiles

- FR1: Users can register as a student, NGO, or corporate
- FR2: Each user has a dashboard tailored to their role
- FR3: KYC verification for NGOs and corporates

3.2 Event Management (NGO)

- FR4: NGOs can list new events with location, time, volunteer needs
- FR5: Can edit, cancel, or reschedule events
- FR6: Assign roles to volunteers (team lead, documentation, logistics)

3.3 Volunteer Matching and Engagement

- FR7: System recommends events based on profile, skills, location
- FR8: Volunteers can check in via QR code or geo-tag
- FR9: Earn points and badges after verified participation
- FR10: Points unlock internship listings, CXO interactions

3.4 CSR Dashboards (Corporate)

- FR11: View impact metrics: hours logged, trees planted, workshops held
- FR12: Download auto-generated media kits and reports

- FR13: Plan “CSR Days” and invite employees

3.5 Industry Exposure, Badges and Certificate (Students)

- FR14: Leaderboard visible across colleges and zones
 - FR15: Titles like "Impact Fellow", "Green Champion"
 - FR16: Mentor session access based on milestones
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4. Non-Functional Requirements – *to be reviewed at the end of the development phase*

4.1 Performance Requirements

- 99.5% uptime
- Real-time sync for dashboards
- Must scale to 100,000 concurrent users during peak events

4.2 Security Requirements

- OAuth 2.0 for authentication
- Data encryption (AES-256 for storage, TLS 1.3 in transit)
- GDPR-compliant for data protection

4.3 Usability Requirements

- Mobile-first responsive design
- Multi-language support (starting with Hindi & English) – *not confirmed*
- Accessible to visually impaired users (WCAG 2.1 compliant)

4.4 Maintainability and Support

- Modular microservices architecture for easy upgrades

- Admin dashboard for monitoring uptime, usage, content moderation
 - Automated backups and rollback options
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5. System Design & Architecture Overview

5.1 System Modules

- **User Module** – Registration, roles, profiles
- **Event Management Module** – Creation, promotion, analytics
- **Matching Engine** – Skill + geo-based volunteer recommendations
- **Gamification Module** – Points, leaderboards, badge allocation
- **CSR Analytics Module** – Dashboards, reporting, export
- **Notification Module** – Reminders, updates via email, SMS, push

5.2 Third-Party Integrations

- Google Maps API for location-based matching
 - LinkedIn API for profile endorsements and volunteer badges – *not confirmed*
 - WhatsApp Business API for volunteer reminders
 - Razorpay or Stripe for donations/funding (future scope)
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6. Suggested Tech Stack

Layer	Technology
Frontend	React.js, Tailwind CSS, Redux, Next.js (SSR support)
Backend	Node.js with Express
Database	PostgreSQL (relational data), Redis (caching), MongoDB (event logs)

Authentication	Firebase Auth or Auth0
Hosting & Infra	AWS (EC2, RDS, S3, CloudFront), Docker, Kubernetes
Analytics	Metabase, Google Analytics, Mixpanel
CI/CD	GitHub Actions, Docker Hub, AWS CodeDeploy
Monitoring	Sentry (errors), Grafana + Prometheus (performance)

7. Use Case Examples

Use Case 1: Student Registration and Event Participation

1. User signs up as a student
2. Completes profile and interests
3. Receives event suggestions nearby
4. Attends event, scans QR for check-in
5. Receives points, climbs leaderboard, qualifies for internship

Use Case 2: NGO Event Listing

1. NGO logs in and creates a new "River Cleanup Drive" in Bhopal
2. Uploads images, defines volunteer requirements
3. Platform auto-matches students based on region and interest
4. Receives volunteer turnout report and photo summary

Use Case 3: Corporate Dashboard

1. Corporate user logs in to view CSR impact dashboard
2. Sees metrics: 2,000 volunteer hours, 3,000 trees planted
3. Downloads report with graphs + images
4. Schedules "CSR Day" and invites local college volunteers

8. Future Scope

- AI-based volunteer engagement recommendations
 - Blockchain-based impact verifiability
 - Integration with university credit systems for official recognition
 - Local language voice assistants for community volunteers
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